



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : HUMAN LYMPHOCYTE
Kenichiro Hasumi et al. : VACCINE ADJUVANT
Application Serial Number 10/783,259 : Examiner Louise Wang Zhiying Humphrey
Filing Date: February 20, 2004 : Attorney Docket Number 358690-00005-1
: Art Unit 1648

DECLARATION UNDER 37 C.F.R. § 1.132

Eckert Seamans Cherin & Mellott, LLC
U.S. Steel Tower
600 Grant Street, 44th Floor
Pittsburgh, Pennsylvania 15219

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

I, Dean L. Mann, declare as follows:

1. I am one of the named inventors of the invention described and claimed in the above-identified patent application.
2. I am a citizen of the United States and reside at 22 S. Greene Street, Baltimore, MD 21201. I attended Goshen College, Goshen, Indiana and graduated in 1956 with a B.S. in science. I attended St. Louis University School of Medicine, St. Louis MO and graduated in 1963 with an M.D. From 1963 to 1964, I was a medical intern at St. Louis University School of Medicine. From 1964-1966, I was an Assistant Resident at St. Louis University School of Medicine. From 1966-1968 I held an NIH Postdoctoral Fellowship in Immunology. From 1968 to 1983, I was a Medical Officer at the NIH, NCI, Division of Cancer Biology and Diagnosis in Bethesda, MD. From 1983-1987, I was a Medical Officer at the NIH, NCI, Division of Cancer Etiology, Laboratory of Human Carcinogenesis in Bethesda, MD. From 1984-1987, I was head of the Biochemical Epidemiology Section, Laboratory of Human Carcinogenesis in Bethesda, MD. From 1987 to 1996, I was Chief of Immunogenetics Section, Laboratory of Viral Carcinogenesis, DBS, NCI-FCRDC in Frederick, MD. From 1996 through the present, I have been Professor in the Department of

Pathology at the University of Maryland School of Medicine. In addition, from 1996-2005, I was Associate Director of the American Red Cross National Histocompatibility Testing Laboratory of the University of Maryland; and from 1996 through the present I have served as head of the Division of Immunogenetics, Department of Pathology, University of Maryland, Baltimore School of Medicine. A copy of my curriculum vitae is attached hereto as Exhibit A.

3. I have read and am thoroughly familiar with the contents of the above-captioned patent application as well as the contents of the Office Action dated August 8, 2006 and the Amendment dated January 8, 2007, filed concurrently herewith. As a specialist in the field of immunology and immunogenetics, and on the basis of this review, it is my well-considered opinion that the invention is more than adequately enabled for the entire scope of the claimed invention and that one skilled in the art would be able to practice the claimed invention in mammals *in vivo* as well as *in vitro* without undue experimentation. Evidence for this attestation is provided below.

4. As fully described in the accompanying paper (attached hereto as Exhibit B), an investigation was undertaken by the inventors of the instant application to determine whether the co-administration of vaccines with the activated lymphocyte conditioned media (LCM) of the present invention enhances T cell and antibody immune responses *in vivo* in non-human primates.

5. The methods of the study included, in brief, taking cryopreserved peripheral blood mononuclear cells (PBMCs) from immunized macaques and washing them in RPMI-1640 containing 20% bovine AB serum (bAB). The PBMCs were resuspended in cRPMI. 10^5 cells/well were cultured with 10 and 20 $\mu\text{g/ml}$ Hepatitis A Vaccine, Rabies Vaccine, Tetanus and Diphtheria Toxoids and prostate specific antigen (PSA) highly pure antigen in coated Elispot plates. As a negative control, cells were cultured in cRPMI alone. Cells were stimulated with 10 $\mu\text{g/ml}$ Con A as a positive control. All conditions were plated in triplicate in a volume of 100 μl /well and incubated for 72 hours at 37°C in 5% CO₂. Elispot plates were prepared by standard method as follows. 96-well nitrocellulose-bottom plates were coated with 100 μl /well of anti-human/monkey IFN γ at a concentration of 15 $\mu\text{g/ml}$ and incubated at 4°C overnight. The following day, the plates were washed six times with 1X PBS and blocked with 100 μl /well of cRPMI. PBMC were plated in triplicate in a volume of 100 μl /well and incubated for 72 hours at 37°C in 5% CO₂. ELISPOT plates were washed six times with PBS and incubated for 3 hours at 25°C with 100 μl /well of biotinylated anti-human/monkey IFN γ at a concentration of 1 $\mu\text{g/ml}$. Plates were washed six times in PBS and

incubated for 1 hour with 100µl/well of Streptavidin-HRP at 25°C. ELISPOT plates were washed a final time in 1X PBS and developed for 30 minutes with 100µl/well of peroxidase substrate AEC kit, followed by rinsing in tap water. Plates were stored over night in the dark at room temperature, and spots were counted using a VersaScan microplate reader. The mean totals of IFN γ spot-forming cells (SFC) in triplicate wells were determined and expressed as numbers of SFC per 1×10^5 PBMC. Sera from immunized macaques were screened for antibodies by ELISA. Antibody titers to hepatitis A were determined by HEPAVASE A-96. Antibody titers to diphtheria and tetanus toxoids were quantified by Diphtheria IgG ELISA and Tetanus IgG ELISA.

6. The results are shown in Exhibit B in Table 1, Figure 1 and Figure 3. Table 1 shows the concentration of pro-inflammatory cytokines and chemokines in the activated LCM that was co-injected with the vaccines to determine if the LCM enhanced T cell and antibody responses in non-human primates to these antigens. Figure 1 shows the time-lines of administration of the vaccines alone and the vaccine co-injected with LCM. This figure also records the days of procurement of cells for examination of T cell response and serum for antibody titer.

7. The recall response to the vaccines in PBMCs from monkeys infected with the vaccine alone or combined with LCM are shown in Fig.2 of Exhibit B hereto. (Due to a freezer accident, the cells and serum obtained from the first 5 blood draws from the control monkeys were lost). Nonetheless, comparison of responses in cells obtained at day 35 in both groups demonstrated residual T cell memory only in some of the animals receiving the vaccines combined with activated LCM. Antibody titers also were greater at this time point and appeared to be sustained at higher levels in the monkeys receiving the vaccines plus activated LCM. Indeed, one of the most convincing pieces of data that LCM acts to enhance immunity to a vaccine is the T cell responses observed to PSA in male monkeys. This is because PSA in non-human primates is closely related in its genetic sequence to the human counterpart that was used as an immunogen in this study.

8. In conclusion, I declare that the results from the above-described investigation clearly show that the activated LCM of the present invention can be used *in vivo* as an adjuvant in vaccines where an enhanced immune response is desired.

9. I declare further that all statements made herein of my own knowledge are true and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of

Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application and any patent issuing thereon.

Dean L. Mann M.D.
Dean L. Mann, M.D.

01/05/07
(DATE)



CURRICULUM VITAE

Dean L. Mann, M.D.

Professor and Head, Division of Immunogenetics
University of Maryland, School of Medicine

Date January 26, 2006

Personal Information

Business Address Division of Immunogenetics
Department of Pathology
University of Maryland, School of Medicine, and

Program in Oncology
The University of Maryland
Marlene and Stewart Greenebaum Cancer Center

Office Address University of Maryland Medical System
Department of Pathology, Division of Immunogenetics
22 S. Greene Street
Baltimore, MD 21201

Phone Number (410) 328-5512

Education

1956	B.A.	Science	Goshen College, Goshen, Indiana
1963	M.D.		St. Louis University School of Medicine St. Louis, MO

Internship (medical)

1963-1964 St. Louis University Hospital
St. Louis, MO

Residency

1964-1966 Assistant Resident, St. Louis University Hospital
St. Louis, MO

Fellowships

1966-1968 NIH Postdoctoral Fellowship in Immunology



Medical Licensures

Virginia

Maryland (Active): #D0050237

Major Research

Interests

Immunogenetics; cell surface antigens; structure/function of major histocompatibility gene products. Immunobiology of AIDS and cancer.

Military Service

None

Employment History

1968-1983	Medical Officer, NIH, NCI, Division of Cancer Biology and Diagnosis, Bethesda, MD
1983-1987	Medical Officer, NIH, NCI, Division of Cancer Etiology, Laboratory of Human Carcinogenesis, Bethesda, MD
1984-1987	Head, Biochemical Epidemiology Section, Laboratory of Human Carcinogenesis, Bethesda, MD
1987-1996	Chief, Immunogenetics Section, Laboratory of Viral Carcinogenesis, DBS, NCI-FCRDC, Frederick, MD
1996-present	Professor, Department of Pathology, University of Maryland, Baltimore, School of Medicine

Major Academic Tasks

1996-2005	Associate Director, American Red Cross National Histocompatibility Testing Laboratory of the University of Maryland
1996-present	Head, Division of Immunogenetics, Department of Pathology, University of Maryland, Baltimore, School of Medicine. The Division has a clinical laboratory that provides histocompatibility testing for transplant services at the University Hospital.

Professional Memberships

American Association for Histocompatibility and Immunogenetics
American Federation for Clinical Research
American Association of Immunologists
Transplantation Society
American Society for Clinical Investigation

Honors, Awards

Alpha Omega Alpha
Distinguished Visiting Professor, University of Vienna,
School of Medicine, Vienna, Austria

Institutional Service

Member, External Advisory Board, Myeloma Institute for Research and Therapy, University of Arkansas, School of Medicine

Administrative Service

National Service

Member, NIAID Vaccine Study Section

Editorial Boards

Reviewer:

1985-present	AIDS
"	Blood
"	Clinical Immunology and Immunopathology
"	Journal of AIDS
"	Journal of AIDS and Human Retrovirology
"	Journal of Immunology
"	Nature Medicine
"	Science
"	Journal of Infectious Disease
"	Immunology and Immunopathology
"	Carcinogenesis
2001-present	Immuno-genetics
"	Human Immunology
2002-present	PNAS

Teaching Responsibilities

2005 Currently mentoring 3 graduate students and 1 post-doctoral fellow in my research laboratory and serving on thesis committees of 3 additional graduate students. One 1st year resident rotated through the lab for several months during 2004.

Grant Support

Active

Project Number/PI: 1R01HL69057-01A1/Jeffery Hasday
Dates of Approved Project: 3/1/03-2/28/07
Total Direct Costs: \$1,250,000
Total Indirect Costs: \$291,250
Effort: 10%
Role: Co-investigator
Source: NHLBI/NIH
Title of Project: "Mechanisms of Fever-Enhanced Hyperoxic Lung Injury"

The major goal of this project is to perform a structure function analysis of the heat-shock-activated transcription factor HSF1 relevant to its TNF repressing activity; to define the molecular basis of its interaction with the TNF promotor, and to determine how it is modified by protein kinases that are activated by bacterial endotoxin.

Project Number/PI: Mann, D.L., M.D.
Dates of Approved Project: 10/2/00-present
Total Direct Costs: \$9,550.00
Total Indirect Costs: \$0
Source: AP Intramural
Title of Project: "Determination of the Role of MICA, MICB in Allograft Rejection"

The objective of this project is to determine the expression of the non-classical HLA Class I-like molecules in allografted tissue and their relationship to rejection.

Project Number/PI: 5U01-A1054641-02/Mann, D.L. M.D.
Dates of Approved Project: 5/15/03-4/30/07
Total Direct Costs: \$1,498,371
Total Indirect Costs: \$726,709
Effort: 20%
Source: The Dow Chemical Co./ NIAID
Title of Project: "Non-invasive Plant Virus-particle Based Anthrax Vaccines"

To assess the *in vitro* and *in vivo* immunogenicity of the plant viral construct expressing anthrax P protein peptides. These studies will confirm the efficacy of plant viral particle based anthrax vaccine.

Project Number/PI: HASUMI/Mann, D.L., M.D.
Dates of Approved Project: 11/17/03-6/30/06
Total Direct Costs: \$397,261
Total Indirect Costs: \$79,452
Effort: 10%
Source: Hasumi International Research Foundation
Title of Project: "Development of Dendritic Cell Based Vaccines for Cancer Immunotherapy"

The overall objective of this proposal is to establish a preclinical model that will address: substances that are produced by the tumors that can be recognized by the host immune system need to be identified and an effective means of delivery of the immunogen.

Project Number/PI: IR21CA101356-01A2/Dr. Aaron Rapoport (Dr. Mann: Co-P.I.)
 Dates of Approved Project: 8/5/04-7/31/06
 Total Direct Costs: \$225,000
 Total Indirect Costs: \$0
 Effort: 15%
 Source: NCI/NIH
 Title of Project: "Immune Responses to T cell Expansion + PCV Immunization"

This is a quick trial for novel cancer therapies to analyze the matter of immune reconstitution, measure T-cell response and assay for the development of T-cell populations.

Project Number/PI: Mann, D.L., M.D.
 Dates of Approved Project: 9/1/04-8/31/06
 Total Direct Costs: \$269,360
 Total Indirect Costs: \$130,640
 Effort: 3%
 Source: Fraunhofer USA/ DOD
 Title of Project: "Targets of the Immune Response Vaccines to Combat Infectious Pathogens"

To determine the capacity of candidate vaccines to generate immune responses in human lymphoid cells in vitro, these studies are designed to determine the extent to which these component vaccines will be recognized by the majority of the individuals in the human population.

Project Number/PI: 1U24CA11509-01/S.A. Stass, M.D., P.I. (Dr. Mann, Co-investigator)
 Dates of Approved Project: 3/21/05-2/28/10
 Total Direct Costs: \$965,828
 Total Indirect Costs: \$468,427
 Effort: Yr 2 Effort Pending
 Source: NIH
 Title of Project: "University of Maryland Biomarker Reference Laboratory"

Continue the national network that has the responsibility for the development, evaluation, and validation of biomarkers for earlier cancer detection and risk assessment.

Project Number/PI: 1R01AI067503-01
 Dates of Approved Project: 8/15/05-1/31/07
 Annual Direct Costs: \$175,090
 Annual Indirect Costs: \$84,918
 Effort: 3%
 Source: NIH/NIAID
 Title of Project: "Immune Reconstitution in Nonhuman Primates"

We will test the central hypothesis that uropathogenic E. coli and P. mirabilis regulate the balance between motility and adherence.

Pending

Project Number/PI: 5U01-A1054641-02/Mann, D.L., M.D.
 Dates of Approved Project: 6/1/05-4/30/06
 Total Direct Costs: \$93,808 (Supplement)
 Effort: %

Source: The Dow Chemical Co./ NIAID
Title of Project: "Non-invasive Plant Virus-particle Based Anthrax Vaccines"

To assess the *in vitro* and *in vivo* immunogenicity of the plant viral construct expressing anthrax P protein peptides. These studies will confirm the efficacy of plant viral particle based anthrax vaccine.

Project Number/PI: PAR-05-152/Shiraz I. Mishra, MBBS, Ph.D. (Dr. Mann, Co-investigator)
Dates of Approved Project: 7/1/06-6/30/09
Total Direct Costs: \$400,000
Effort: 1%-Yrs 1 & 2; 2%-Yr 3
Source: NIH/NCCAM
Title of Project: Mindfulness Based Stress Reduction Program for Breast Cancer Survivors

The pilot project explores the feasibility of implementing a mind-body medicine therapy, the Mindfulness Based Stress Reduction Program, among African American and Caucasian post-treatment, early stage breast cancer survivors. In addition, the pilot project assesses whether the program equally impact African American and Caucasian women on outcomes such as quality of life, psychological distress, locus of control, symptoms of stress, and immune function.

Project Number/PI: Mann, D.L., M.D.
Dates of Approved Project: 3/31/06-3/30/08
Total Direct Costs: \$281,143
Effort: 5%
Source: Booz Allen Hamilton, Inc.
Title of Project: Professional Support Services-NIAID Flow Cytometry Personnel

Completed Research Support

Project Number/PI: #1R01A141951-01/Kaslow
Dates of Approved Project: 09/01/97-08/31/00
Annual Direct Costs: \$42,089
Effort: 5%
Source: NIAID/NIH (Univ Alabama at Birmingham)
(Subcontract) University of Maryland, Dr. Mann Co-investigator
Title of Project: "Genetic Factors in the Epidemiology of HIV-1 Infection"

This project investigated the role of alleles of the major histocompatibility complex Class I and Class II genes on disease progression in an HIV-1 infected cohort.

Project Number/PI: DAMD17-98-1-8466/Mann, D.L., M.D.
Dates of Approved Project: 07/01/98-12/31/01
Annual Direct Costs: \$125,000
Effort: 15%
Source: USMRMC
Title of Project: "Prostate Tumor Antigen Discovery: Development of a Novel Genetic Approach"

To investigate parameters of immunologic response to prostate cancer cells in order to establish a rational immunotherapeutic treatment modality using potent antigen presenting dendritic cells.

Project Number/PI: 5-R24-CA82888-03/Mann, D.L., M.D.
Dates of Approved Project: 8/1/99-7/31/03
Annual Direct Costs: \$150,000
Effort: 15%
Source: NCI, NIH
Title of Project: "Flow Cytometry Applications in Cancer Biology"

The goal of this project is to provide state-of-the-art flow cytometry equipment, trained personnel, and advice and direction for the use of this equipment in studies of cancer biology.

Project Number/PI: 1-R01-GM58721-01A2/DeClaris, N., Ph.D. (Mann, D.L., M.D., Co-PI)
Dates of Approved Project: 9/1/00-8/31/03
Annual Direct Costs: \$102,038
Effort: 10%
Source: NIH (U of Texas, M.D. Anderson Cancer Center (Subcontract))
Title of Project: "Robust Generalization in MHC Peptide Binding Models"

The goal of this project was to explore the potential of an innovative feature space geometric approach for the design and implementation of MHC peptide binding models. Dr. Mann designs experiments to test the predicted peptides for function.

Project Number/PI: 5U01-CA-069854-08/Karp (Mann, D.L., MD. Investigator)
Dates of Approved Project: 3/1/02-2/28/03
Annual Direct Costs: \$399,076
Effort: 5%
Source: NCI, NIH
Title of Project: "Phase I Trials of Anti-cancer Agents"

Dr. Mann supervises flow cytometry studies that are used to monitor patient responses to chemotherapeutic agents in clinical Phase I trials.

Project Number/PI: Mann, D.L., M.D.
Dates of Approved Project: 7/1/02-6/30/04
Annual Direct Costs: \$183,128
Effort: 15%
Source: Hasumi International Research Foundation
Title of Project: "Development of Dendritic Cell-Based Vaccines for Cancer Immunotherapy"

The overall objective of this proposal is to establish a preclinical model that will address: substances that are produced by the tumors that can be recognized by the host, immune system needs to be identified, and an effective means of delivery of the immunogens must be developed.

Publications

Journal Articles (Peer Reviewed)

1. Mann, D.L., Sites, M.L., Donati, R.M., & Gallagher, N.I. Erythropoietic stimulating activity during the first ninety days of life. *Proceedings of the Society for Experimental Biology and Medicine*, 118: 212-217, 1965.
2. Mann, D.L., Donati, R.M., & Gallagher, N.I. Erythropoietin assay and ferrokinetic measurements in anemic uremic patients. *JAMA*, 194: 1321-1324, 1965.
3. Mann, D.L., Donati, R.M., & Gallagher, N.I. Effect of renin, angiotensin II and aldosterone on erythropoiesis. *Proceedings of the Society for Experimental Biology and Medicine*, 121: 1152-1157, 1966.
4. Mann, D.L., Gallagher, N.I., & Donati, R.M. Erythrocytosis and primary aldosteronism. *Annals of Internal Medicine*, 66: 335-339, 1967.
5. Mann, D.L., Donati, R.M., & Gallagher, N.I. Relationship of renal mass to erythropoietin production. *Laboratory Investigation*, 19: 406-411, 1968.
6. Mann, D.L., Rogentine, G.N. Jr., Fahey, J.L., & Nathenson, S.G. Solubilization of human leukocyte membrane isoantigens. *Nature*, 217: 1180-1181, 1968.
7. Mann, D.L., Granger, H., & Fahey, J.L. Use of insoluble antibody for the determination of small amounts of immunoglobulins. *Journal of Immunology*, 102: 618-624, 1969.
8. Mann, D.L., Rogentine, G.N. Jr., Fahey, J.L., & Nathenson, S.G., Solubilization, properties and molecular separation of HL-A alloantigens. *Transplantation Proceedings*, 1: 494-497, 1969.
9. Mann, D.L., Rogentine, G.N. Jr., Fahey, J.L., & Nathenson, S.G. Molecular heterogeneity of human lymphoid (HL-A) alloantigens. *Science*, 163: 1460-1462, 1969.
10. Mann, D.L., Rogentine, G.N. Jr., Fahey, J.L., & Nathenson, S.G. Human lymphocyte membrane (HL-A) alloantigens: Isolation, purification and properties. *Journal of Immunology*, 103: 282-292, 1969.
11. Fahey, J.L., Mann, D.L., Asofsky, R., & Rogentine, G.N. Jr. Recent progress in human transplantation immunology. *Annals of Internal Medicine*, 71: 1177-1195, 1969.
12. Mann, D.L. & Nathenson, S.G. Comparisons of soluble human and mouse transplantation antigens. *Proceedings of the National Academy of Sciences USA*, 64: 1380-1387, 1969.
13. Mann, D.L., Fahey, J.L., & Nathenson, S.G. Molecular comparisons of papain solubilized H-2 and HL-A alloantigens. *Histocompatibility Testing*. Copenhagen. Munksgaard, pp. 461-467, 1970.
14. Graft, R.G., Mann, D.L., & Nathenson, S.G. Immunogenic properties of papain-solubilized H-2 alloantigens. *Transplantation*, 10: 59-64, 1970.
15. Nathenson, S.G., Shimada, A., Yamane, K., Maramatsu, T., Cullen, S., Mann, D.L., Fahey, J.L., &

- Graff, R.G. Biochemical properties of papain solubilized murine and human histocompatibility alloantigens. *Federation Proceedings*, 29: 2026-2033, 1970.
16. Leventhal, B.G., Rogentine, G.N. Jr., & Mann, D.L. Sensitization to water soluble transplantation antigens. *Transplantation*, 3: 243-245, 1971.
 17. Mann, D.L. & Fahey, J.L. Properties of HL-A alloantigens solubilized by chemical techniques. *Transplantation Proceedings*, 3: 234-237, 1971.
 18. Rosenberg, E.B., Mann, D.L., Hill, J.J., & Fahey, J.L. Prolonged allograft survival in mice pretreated with soluble transplantation antigens. *Transplantation*, 12: 402-405, 1971.
 19. Merritt, C.B., Mann, D.L., & Rogentine, G.N. Jr. Cytotoxic antibody in human graft versus host disease. *Nature*, 232: 638-641, 1971.
 20. Mann, D.L. & Fahey, J.L. Transplantation antigens. *Annual Review of Microbiology*, 25: 679-710, 1971.
 21. Einstein, A.B., Mann, D.L., Gordon, H.G., Trapani, R.J., & Fahey, J. Heterologous antisera against specific HL-A alloantigens. *Transplantation*, 12: 299-304, 1971.
 22. Einstein, A.B., Mann, D.L., Gordon, H.G., & Fahey, J.L. The immune reactivity of heterologous antisera against solubilized lymphoid cell membrane component. *Tissue Antigens*, 1: 209-218, 1971.
 23. Einstein, A.B., Mann, D.L., Ficker, S., & Terry, W.D. Antiserum to soluble lymphoid membrane preparation stimulates human leukocyte DNA synthesis. *Journal of Immunology*, 107: 1205-1208, 1971.
 24. Whisnant, J., Mann, D.L., Rogentine, G.N. Jr., & Robbins, J. Human cell surface structures related to haemophilus influenzae type B disease. *Lancet*, 2: 895-898, 1971.
 25. Mann, D.L., Halterman, R., Rogentine, G.N. Jr., & Leventhal, B. Detection of an acute leukemia associated antigen. *Science*, 174: 1136-1137, 1971.
 26. Mann, D.L. Effect of enzyme inhibition on the solubilization of HL-A antigen with 3M KCl. *Transplantation*, 14: 398-401, 1972.
 27. Amos, B.D., Bodmer, W.F., Ceppellini, R., Condliffe, P.G., Dausett, J., Fahey, J.L., Goodman, H.C., Klein, G., Klein, J., Lilly, F., Mann, D.L., McDevitt, H., Nathanson, S., Palm, J., Reisfeld, R.A., Rogentine, G.N., Sanderson, A.R., Shreffler, D.C., Simonsen, M., & van Rood, J.J. Biologic significance of histocompatibility antigens. *Federation Proceedings*, 31: 1087-1104, 1972.
 28. Halterman, R., Leventhal, B.G., & Mann, D.L. An acute leukemia associated antigen: Clinical correlation. *New England Journal of Medicine*, 287: 1272-1274, 1972.
 29. Gavin, J.R., Mann, D.L., Buell, D.N., & Roth, J. Preparation of solubilized insulin receptors from human lymphocytes. *Biochemical and Biophysical Research Communication*, 49: 870-876, 1972.
 30. Mann, D.L., Halterman, R., & Leventhal, B.G. Cross reactive antigens on human cells infected

with Rauscher leukemia virus and on human acute leukemia cells. Proceedings of the National Academy of Sciences, 70: 495-497, 1973.

31. Yust, I., Wunderlich, J.R., Mann, D.L., & Buell, D.N. Cytotoxicity mediated by human lymphocyte dependent antibody in a rapid assay with adherent target cells. Journal of Immunology, 110: 1672-1681, 1973.
32. Mann, D.L., Halterman, R., & Leventhal, B. Acute leukemia associated antigens. Cancer, 34: 1446-1451, 1974.
33. Springer, T.A., Strominger, J.L., & Mann, D.L. Partial purification of detergent soluble HL-A antigen and its cleavage by papain. Proceedings of the National Academy of Sciences USA, 71: 1539-1543, 1974.
34. Yust, I., Wunderlich, J.R., Mann, D.L., & Terry, W.D. Identification of lymphocyte dependent antibody in sera from multiply transfused patients. Transplantation, 18: 99-107, 1974.
35. Yust, I., Wunderlich, J., Mann, D.L., Leventhal, B., Yankee, R., & Graw, R. Human lymphocyte dependent antibody mediated cytotoxicity and direct lymphocyte cytotoxicity against non-HL-A antigens. Nature, 249: 263-265, 1974.
36. Strominger, J.L., Cresswell, P., Grey, H., Humphreys, R.H., Mann, D.L., McCune, J., Parham, P., Robb, R., Sanderson, A.R., Springer, T.A., Terhorst, C., & Turner, M.J. The immunoglobulin-like structure of human histocompatibility antigens. Transplantation Reviews, 21: 126-143, 1974.
37. Robb, R.J., Humphreys, R.E., Ruller, T.C., Mann, D.L., & Strominger, J.L. Rabbit antisera to papain-solubilized HL-A antigens. Transplantation, 19: 445-447, 1975.
38. Yust, I., Smith, R.W., Dickler, H.B., Wunderlich, J., & Mann, D.L. Human lymphocyte dependent antibody mediated cytotoxicity: Adherence of lymphocytes to antibody treated target cells. Cellular Immunology, 18: 176-186, 1975.
39. Mann, D.L. An approach to the development of antisera to tumor associated antigens: Experience with acute leukemia and melanoma. Monograph: Symposium on Immunologic Reactions to Melanoma Antigens. Behring Institute Mitteilungen, 56: 103-106, 1975.
40. Mann, D.L., Leventhal, B., & Halterman, R. Human antisera detecting leukemia associated antigens on autochthonous tumor cells. Journal of the National Cancer Institute, 54: 345-347, 1975.
41. MacDonald, J.S., Wunderlich, J.R., Yust, I., Mann, D.L., & Yankee, R.A. Complement-dependent and cell-dependent antiplatelet humoral antibody in sera from multiply transfused patients. Clinical and Experimental Immunology, 21: 259-266, 1975.
42. Miller, J.L., Mann, D.L., & Yust, I. Separation of complement dependent and lymphocyte dependent activity in human sera. European Journal of Immunology, 5: 546-548, 1975.
43. Mann, D.L., Abelson, L., Harris, S., & Amos, D.B. Detection of antigens specific for "B" lymphoid cultured cell lines with human alloantisera. Journal of Experimental Medicine, 142: 84-89, 1975.

44. Sacks, K.L., Olweny, C., Mann, D.L., Simon, R., Johnson, G.E., Poplack, D.G., & Leventhal, B.D. A clinical trial of chemotherapy and RAJI immunotherapy in advanced acute lymphatic leukemia (ALL): Clinical and laboratory observations. *Cancer Research*, 35: 3715-3720, 1975.
45. Mann, D.L., Abelson, L., Henkart, P., Harris, S.D., & Amos, D.B. Specific human B lymphocyte alloantigens (L-B) linked to HL-A. *Proceedings of the National Academy of Sciences*, 72: 5103-5106, 1975.
46. Pendergrass, T.W., Stoller, R.G., Mann, D.L., Halterman, R.H., & Fraumeni, J.F. Acute myelocytic leukemia and leukemia associated antigens in sisters. *Lancet*, ii: 429-431, 1975.
47. Turner, M.J., Cresswell, P., Parham, P., Strominger, J.L., & Mann, D.L. Purification of papain-solubilized histocompatibility antigens from a cultured human lymphoblastoid line, RPMI 4265. *Journal of Biological Chemistry*, 250: 4512-4519, 1975.
48. Mann, D.L., Abelson, L., Harris, S., & Amos, D.B. A second genetic locus within the HL-A region for human B cell alloantigens. *Nature*, 259: 145-146, 1976.
49. Mann, D.L., Katz, S.I., Nelson, D.L., Abelson, L.D., & Strober, W. Specific B-cell antigens associated with gluten-sensitive enteropathy and dermatitis herpetiformis. *Lancet*, i: 110-111, 1976.
50. Yust, I., Smith, R.W., Wunderlich, J.R., & Mann, D.L. Temporary inhibition of antibody-dependent, cell-mediated cytotoxicity by pretreatment of human attacking cells with ammonium chloride. *Journal of Immunology*, 116: 1170-1172, 1976.
51. Terhorst, C., Parham, P., Mann, D.L., & Strominger, J.L. Structure of HLA antigens: Amino acid and carbohydrate compositions and N-terminal sequences of four antigen preparations. *Proceedings of the National Academy of Sciences USA*, 73: 910-914, 1976.
52. Humphreys, R.E., McCune, J.M., Chess, L., Herrmann, H.C., Malenka, D., Mann, D.L., Parham, P., Schlossman, S.F., & Strominger, J.L. Isolation and immunologic characterization of a human, B-lymphocyte-specific cell surface antigen. *Journal of Experimental Medicine*, 144: 98-112, 1976.
53. Miller, J.L., Humphreys, R.E., & Mann, D.L. Lack of association of human "B cell" antigens and Fc receptor activity of antibody-dependent cytotoxic lymphocytes. *Journal of Immunology*, 117: 491-496, 1976.
54. Robb, R., Mann, D.L., & Strominger, J.L., Rapid purification of detergent-solubilized HLA antigens by affinity chromatography employing anti-2 microglobulin serum. *Journal of Biological Chemistry*, 251: 5427-5428, 1976.
55. Romano, P.J. & Mann, D.L. Specific MLC stimulation by cultured B cells. *Tissue Antigens*, 8: 9-12, 1976.
56. Nilsson, S., Schwartz, B., Waxdal, M., Green, I., Cullen, S., & Mann, D. A human alloantiserum detects Ia-like molecules on chronic lymphocytic leukemia cells. *Journal of Immunology*, 118: 1271-1274, 1977.

57. Strominger, J.L., Mann, D.L., Parham, P., Robb, R., Springer, T., & Terhorst, C. Structure of HLA-A and HLA-B antigens isolated from cultured human lymphocytes. Cold Spring Harbor Symposia on Quantitative Biology, XLI: 323-329, 1977.
58. Springer, T.A., Kaufman, J.F., Giphart, M., Mann, D., Terhorst, C., & Strominger, J.L. Chemical and immunological characterization of HLA-linked B lymphocyte alloantigens. Cold Spring Harbor Symposia on Quantitative Biology, XLI: 387-396, 1977.
59. Mann, D.L. Human lymphocyte alloantigens: genetic control and relation to disease. Clinics in Haematology, 6: 331-354, 1977.
60. Springer, T.A., Mann, D.L., DeFranci, A.L., & Strominger, J.L. Detergent solubilization, purification, and separation of specificities of HLA antigens from a cultured human lymphoblastoid line, RPMI 4265. Journal of Biological Chemistry, 252: 2682-2693, 1977.
61. Nelson, D.L., Strober, W., Abelson, L.D., Bundy, B.M., & Mann, D.L. Distribution of alloantigens on human Fc receptor bearing lymphocytes: the presence of B-cell alloantigens in slg positive but not slg negative lymphocytes. Journal of Immunology, 118: 943-946, 1977.
62. Strong, D.M., Knudsen, B.B., Mann, D.L., & Sell, K.W. Frozen-thawed mononuclear cells as a source of B lymphocytes for antibody screening. Tissue Antigens, 10: 108-113, 1977.
63. Grier, J.G., Abelson, L.A., Mann, D.L., Amos, D.B., & Johnson, A.H.: Enrichment of B lymphocytes using goat anti-human F(ab)2. Tissue Antigens, 10: 236, 1977.
64. Springer, T.A., Kaufman, J.F., Siddoway, L.A., Mann, D.L., & Strominger, J.L. Purification of HLA-linked B lymphocyte alloantigens in immunologically active form by preparative sodium dodecyl sulfate gel electrophoresis and studies on their subunit association. Journal of Biological Chemistry, 252: 6201-6207, 1977.
65. Abelson, L.D. & Mann, D.L. Genetic control of B-cell alloantigens: Evidence for gene(s) linked to the HLA-A locus. Tissue Antigens, 11: 295-301, 1978.
66. Blattner, W.A., Naiman, J.L., Mann, D.L., Wimer, R.S., Dean, J.H., & Fraumeni, J.F. Immunogenetic determinants of familial acute lymphocytic leukemia. Annals of Internal Medicine, 89: 173-176, 1978.
67. Reinertsen, J., Klippel, J., Johnson, A., Steinberg, A., Decker, J., & Mann, D. B-lymphocyte alloantigens associated with systemic lupus erythematosus. New England Journal of Medicine, 299: 515-518, 1978.
68. Pena, A.S., Mann, D.L., Hague, N.E., Van Leeuwen, A., van Rood, J.J., & Strober, W. The genetic basis of gluten-sensitive enteropathy. Gastroenterology, 75: 230-238, 1978.
69. Moutsopoulos, H.M., Chused, T.M., Johnson, A.H., Knudsen, B., & Mann, D.L. B lymphocyte alloantigens in sicca syndrome. Science, 199: 1441-1442, 1978.
70. Stingl, G., Katz, S.I., Abelson, L.D. & Mann, D.L. Immunofluorescent detection of human B cell alloantigens on slg positive lymphocytes and epidermal langerhans cells. Journal of Immunology, 120: 661-664, 1978.

71. Mann, D.L., Knudsen, B.D., Yarbrow, G.C., & Leventhal, B.G. Human B cell antigens in acute lymphocytic leukemia. Lack of correlation with other lymphocyte cell surface markers. *Journal of National Cancer Institute*. 63: 49-53, 1979.
72. Mann, D.L., Kaufman, J., Orr, H., Robb, R., & Strominger, J. Serologic and structural studies of DR related antigens. *Transplantation Proceedings*, Vol. X: 668-673, 1979.
73. Nilsson, S.F., Edelson, R., Mann, D.L., Green, I., & Waxdal, M.J. Concanavalin A binding proteins on the surface of human malignant and normal lymphocytes. *Scandinavian Journal of Immunology*. 9: 483-492, 1979.
74. Moutsopoulos, H.M., Mann, D.L., Johnson, A.H., & Chused, T. Genetic differences between primary and secondary Sicca Syndrome. *New England Journal of Medicine*, 301: 761-763, 1979.
75. Dattner, A.M., Mann, D.L., & Levis, W.R. Studies on the contact sensitization of man with simple chemicals. V. Clonal priming allows direct *in vitro* assessment of autologous HLA-associated factors required for immune response (IR) in dinitrochlorobenzene. *Journal of Investigative Dermatology*, 73: 246-249, 1979.
76. Lunney, J.K., Mann, D.L., & Sachs, D.H. Sharing of Ia antigens between species. III. Ia specification shared between mice and human beings. *Scandinavian Journal of Immunology*, 10: 403-413, 1979.
77. Mann, D.L. & Sharrow, S.O. "B cell" alloantigens on T lymphocytes. *Transplantation Proceedings*. 11: 1774-177, 1979.
78. Strominger, J.L., Kabat, E.A., Bilofsky, H., Mann, D.L., Orr, H., Parham, P., Ploegh, H., Robb, R., Terhorst, C., & Wu, T.T. Structural homologies between HLA-A and HLA-B antigens and immunoglobulin. *Transplantation Proceedings*, 11: 1303, 1979.
79. Broder, S., Mann, D.L., & Waldmann, T.A. Participation of suppressor cells in the immunosuppressive activity of a heteroserum to human Ia-like antigens. *Journal of Experimental Medicine*, 151: 257-262, 1980.
80. Moutsopoulos, H.M., Chused, T.M., Mann, D.L., Klippel, J.H., Fauci, A.S., Frank, M.M., Lawley, T.J., & Hamberger, M.I. Sjogren's syndrome (Sicca syndrome): current issues. *Annals of Internal Medicine*, 92: 212-226, 1980.
81. Mann, D.L. & Muchmore, A. Inhibition of anti DRw sera reactivity with mono and oligo saccharides. *Journal of Immunology*, 124: 2218-2221, 1980.
82. Strominger, J.L., Orr, H.T., Parham, P., Ploegh, H.L., Mann, D.L., Bilofsky, H., Saroff, H.A., Wu, T.T., & Kabat, E.A. An evaluation of the significance of amino acid sequence homologies in human histocompatibility antigens (HLA-A and HLA-B) with immunoglobulins and other proteins, using relatively short sequences. *Scandinavian Journal of Immunology*, 11: 573-592, 1980.
83. Mann, D.L. & Abelson, L.A. Monocyte function in mixed lymphocyte reactions. *Cellular*

Immunology, 56: 357-364, 1980.

84. Haynes, B.F., Mann, D.L., Hemler, M.E., Schroer, J.A., Shelhamer, J.H., Eisenbarth, G.S., Strominger, J.L., Thomas, C.A., Mostowski, H.S., & Fauci, A.S. Characterization of a monoclonal antibody which defines an immunoregulatory T cell subset for immunoglobulin synthesis in man. *Proceedings of the National Academy of Sciences*. 77: 2914-2918, 1980.
85. Mann, D.L. & Sharrow, S.O. HLA-DRw alloantigens can be detected on peripheral blood T lymphocytes. *Journal of Immunology*, 125: 1889-1896, 1980.
86. Murray, C., Nigra, T.P., Gerber, L.N., Barth, W., Perlmann, S., Decker, J., & Mann, D.L. HLA alloantigens in psoriasis and psoriatic arthritis. Evidence for the influence of multiple genes in the major histocompatibility complex. *Journal of Clinical Investigation*, 66: 670-675, 1980.
87. Blattner, W.A., Garber, G.E., Mann, D.L., McKean, E.A., Henson, R., McGuire, D.B., Fisher, W.B., Bauman, A.W., Golden, L.R., & Fraumeni, J.F. Waldenstrom's macroglobulin anemia and autoimmune disease in the family. *Annals of Internal Medicine*, 93: 830-832, 1980.
88. Haynes, B.F., Bunn, P., Mann, D.L., Thomas, C.A., Eisenbarth, G.S., Minna, J., & Fauci, A.S. Cell surface differentiation antigens of the malignant T cell in Sezary syndrome and myosis fungoides. *Journal of Clinical Investigation*. 67: 523-530, 1981.
89. Haynes, B.F., Hemler, M., Cotner, T., Mann, D.L., Eisenbarth, G.S., Strominger, J.L., & Fauci, A.S. Characterization of a monoclonal antibody (5E9) which defines a human cell surface antigen of activation. *Journal of Immunology*. 127: 347-351, 1981.
90. Haynes, B.F., Hemler, M.E., Mann, D.L., Eisenbarth, G.S., Shelhamer, J., Mostowski, H.S., Thomas, C.L., Strominger, J.L., & Fauci, A.S. Characterization of a monoclonal antibody (4F2) which binds to human monocytes and to a subset of activated lymphocytes. *Journal of Immunology*, 126: 1409-1414, 1981.
91. Shackelford, D.A., Mann, D.L., van Rood, J.J., Ferrara, G.B., & Strominger, J.L. Human B cell alloantigens DC1, MT1 and LB12 are identical to each other but distinct from the HLA-DR antigen. *Proceedings of National Academy of Sciences USA*, 78: 4566-4570, 1981.
92. Williams, R.C., Knowles, W.C., Butler, W.J., Pettitt, D.J., Lisse, J.R., Bennett, P.H., Mann, D.L., Johnson, A.H., & Terascki, P.I. HLA-A2 and type 2 (insulin independent) diabetes mellitus in Pima Indians: an association with allele frequency. *Diabetologica*, 21: 460-463, 1981.
93. Chrousos, G.P., Loriaux, L., Mann, D.L., & Cutler, G. Late onset of 21-hydroxylase deficiency mimicking Idiopathic Hirsutish or polycystic disease: An allelic variant of congenital virilizing adrenal hyperplasia with a milder enzymatic defect. *Annals of Internal Medicine*, 96: 143-148, 1982.
94. Volkman, D.J., Mann, D.L., & Fauci, A.S. Association between Takayasu's arthritis and a B-cell alloantigen in North Americans. *New England Journal of Medicine*. 306: 464-465, 1982.
95. Goedert, J., Newland, C., Wallin, W. C., Green, M., Mann, D.L., Murray, C., Strong, D.M., Fraumeni, J., & Blattner, W. Amyl nitrate may alter T-lymphocytes in homosexual men. *Lancet*. 1: 412-416, 1982.

96. Lisse, J.R., Kuberski, T.T., Bennett, P.H., Knowler, W.C., Grafton, J.P., Colin, A., & Mann, D.L. High risk of sacroiliitis in HLA-B27 positive Pima Indian men. *Arthritis and Rheumatism*, 25: 236-238, 1982.
97. Karr, R.W., Kannapell, C.C., Stein, J.A., Gebel, H.M., Mann, D.L., Duquesnoy, R.J., Fuller, T.C., Rodey, G.E., & Schwartz, B.D. Molecular relationships of the human B cell alloantigens MT2, MB3, MT4, and DR5. *Journal of Immunology*, 128: 1809-1818, 1982.
98. Muchmore, A.V., Decker, J.M., & Mann, D.L. Evidence that antisera that react with products of the human HLA-DR locus may block *in vitro* antigen-induced proliferation by inducing suppression. *Journal of Immunology*, 128: 2063-2066, 1982.
99. Chrousos, G.P., Loriaux, L.D., Mann, D., & Cutler, G.B. Late onset of 21-hydroxylase deficiency in an allelic variant of congenital adrenal lymp(er)plasia characterized by attenuated clinical expression and different HLA haplotype associations. *Hormone Research*, 16: 193-200, 1982.
100. Kahn, C.R., Mann, D., Rosenthal, A.S., Galloway, J.A., Johnson, A.H., & Mendell, N. The immune response to insulin in man: interaction of HLA alloantigens and the development of the immune response. *Diabetes*, 31: 716-723, 1982.
101. Gerber, L.A., Murray, C.L., Perlman, S.G., Barth, W.F., Decker, J.L., Nigra, T.A., & Mann, D.L. Human lymphocyte antigens characterizing psoriatic arthritis and its subtypes. *Journal of Rheumatology*, 9: 703-707, 1982.
102. Gallo, R.C., Mann, D.L., Broder, S., Ruscetti, F.W., Maeda, M., Kalyanaraman, U.S., Robert-Guroff, M., & Reitz, M.S. Human T cell leukemic-lymphoma virus (HTLV) in T--but not B--lymphocytes from a patient with cutaneous T-cell lymphoma. *Proceedings of the National Academy Sciences USA*, 79: 5680-5683, 1982.
103. Reinertsen, J.L., Klippel, J.H., Johnson, A.H., Steinberg, A.D., Decker, J.L., & Mann, D.L. Family studies of B lymphocyte alloantigens in systemic lupus erythematosus. *Journal of Rheumatology*, 9: 253-262, 1982.
104. Karr, R.W., Kannapell, C.C., Stein, J.A., Fuller, T.C., Duquesnoy, R-J., Rodey, G. E., Mann, D.L., Gebel, H. M., & Schwartz, B.D. Demonstration of a third structurally distinct human Ia beta chain by 2 dimensional gel electrophoresis. *Journal of Experimental Medicine*, 156: 652-657, 1982.
105. Nashel, D.J., Leonard, A., Mann, D.L., Gucicion, J.G., Katz, A.L., & Sliwinski, A.J. Analyzing spondylitis and systemic lupus erythematosus: a rare HLA combination. *Archives of Internal Medicine*, 142: 1227-1228, 1982.
106. Popovic, M., Sarin, P.S., Robert-Guroff, M., Kalyanaraman, U.S., Mann, D.L., Minowada, J., & Gallo, R.C. Isolation and transmission of human retrovirus (human T-cell leukemia virus). *Science*, 219: 856-859, 1983.
107. Mann, D.L. & Moutsopoulos, H.M. HLA DR alloantigens in different subsets of patients with Sjogren's syndrome and in family members. *Annals of the Rheumatic Disease*, 42: 533-536, 1983.
108. Mann, D.L., Popovic, M., Sarin, P., Murray, C., Strong, D.M., Haynes, B.F., & Gallo, R.G. Cell

lines producing human T cell lymphoma virus (HTLV) have altered HLA expression. *Nature*, 305: 58-60, 1983.

109. Ensroth, A.F., Mann, D.L., Johnson, A.H., Knowler, W.C., Pettitt, D.J., & Bennett, P.H., HLA and B-lymphocyte alloantigens in Gila River Indians. *Tissue Antigens*. 21: 198-207, 1983.
110. Mann, D.L., Haynes, B.F., Thomas, C., Cole, D., Fauci, A.S., & Poplack, D.G. Heterogeneity of cell surface markers on acute lymphocytic leukemia cells as detected by monoclonal antibodies. *Journal of National Cancer Institute*. 71: 11-17, 1983.
111. Mann, D.L., Popovic, M., Murray, C., Neuland, C., Strong, D.M., Sarin, P., Gallo, R.C., & Blattner, W.A. Cell surface antigen expression in new-born cord blood lymphocytes infected with HTLV. *Journal of Immunology*. 131: 2021-2024, 1983.
112. Mann, D.L., Mendell, N., Kahn, C.R., Johnson, A.H., & Rosenthal, A. *In vitro* lymphocyte proliferation response to therapeutic insulin components: evidence for genetic control by the human major histocompatibility complex. *Journal of Clinical Investigation*. 72: 1130-1138, 1983.
113. Gallo, R.C., Sarin, P.S., Gelmann, E.P., Robert-Guroff, M., Richardson, E., Kalyanaraman, V. S., Mann, D., Sidhu, G. D., Stahl, R. E., Leibowitch, J., & Popovic, M. Isolation of human T cell leukemia virus (HTLV) in acquired immune-deficiency syndrome (AIDS). *Science*, 220: 865-867, 1983.
114. Popovic, M., Lange-Wantzin, G., Sarin, P.S., Mann, D., & Gallo, R.C. Transformation of human umbilical cord blood T-cells by human T-cell leukemia/lymphoma virus (HTLV). *Proceedings of the National Academy of Sciences*. 80: 5402-5406, 1983.
115. Mitsuya, H., Matis, L.A., Megson, M., Bunn, P.A., Murray, C., Mann, D.L., Gallo, R.C., & Broder, S. Generation of an HLA-restricted cytotoxic T-cell line reactive against cultured tumor cells from a patient infected with human T-cell leukemia/lymphoma virus (HTLV). *Journal of Experimental Medicine*. 158: 994-999, 1983.
116. Muchmore, A.V., Megson, M., Decker, J.M., Knudsen, P., Mann, D.L., & Broder, S. Inhibitory activity of antibodies to human Ia-like determinants: comparison of intact and pepsin-digested antibodies. *Journal of Immunology*. 131: 725-730, 1983.
117. Karsh, J., Klippel, J.H., Mann, D.L., Reinertsen, J.L., Mantsopolous, H.M., Johnson, A.H., & Decker, J.L. Histocompatibility antigen combinations in rheumatoid arthritis. *Clinical and Experimental Rheumatology*. 1: 11-15, 1983.
118. Biggar, R.J., Andersen, H.K., Ebbesen, P., Melbye, M., Mann, D.L., & Strong, D.M. Seminal fluid excretion of CMV in homosexual men related to immunosuppression. *British Medical Journal*, 286: 2010-2012, 1983.
119. Neuland, C.Y., Blattner, W.A., Mann, D.L., Fraser, M.C., Tsai, S., & Strong, D.M. Familial chronic lymphocytic leukemia. *Journal of the National Cancer Institute*. 71: 1143-1150, 1983.
120. Biggar, R.J., Melbye, M., Ebbesen, P., Mann, D.L., Goedert, J.J., Weinstock, R., Strong, D.M., & Blattner, W.A. Low T lymphocyte ratios in homosexual men: Epidemiologic evidence for a transmissible agent. *JAMA*. 251: 1441-1446, 1984.

121. Mitsuya, H., Matis, L.A., Megson, M., Cohen, O.J., Mann, D.L., Gallo, R.C., & Broder, S., Immune T cells reactive against human T-cell leukemia/lymphoma virus. *The Lancet*. (March 24): 649-652. 1984.
122. Goedert, J.J., Biggar, R.J., Winn, D.M., Greene, M.H., Mann, D.L., Gallo, R.C., Sarngadharan, M.G., Weiss, S.H., Grossman, R.J., Bodner, A.J., Strong, D.M., & Blattner, W.A. Determinants of retrovirus (HTLV-III) antibody and immunodeficiency conditions in homosexual men. *Lancet*, 8405: 711-716, 1984.
123. Stiehm, E.R., Szein, M.B., Steeg, P.S., Mann, D.L., Newland, C., Blaese, M., & Oppenheim, J.J. Deficient DR antigen expression on human cord blood monocytes: reversal with lymphokines. *Clinical Immunology and Immunopathology*, 30: 430-436, 1984.
124. Clarke, M.F., Trainor, C.D., Mann, D.L., Gallo, R.C., & Reitz, M.S. Methylation of human T-cell leukemia virus proviral DNA and viral RNA expression in short- and long-term cultures of infected cells. *Virology*, 135: 97-104, 1984.
125. Reitz, M.S., Mann, D.L., Eiden, M., Trainor, C.D., & Clarke, M.F. DNA methylation and expression of HLA-DR alpha. *Molecular and Cellular Biology*, 4: 890-897, 1984.
126. Mann, D.L., Clark, J., Clarke, M., Reitz, M., Popovic, M., Franchini, G., Trainor, C.D., Strong, D.M., Blattner, W.A., & Gallo, R.C. Identification of the human T-cell lymphoma virus (HTLV) in B-cell lines established from patients with adult T-cell leukemia. *Journal of Clinical Investigation*, 74: 56-62, 1984.
127. Popovic, M., Flomenberg, N., Volkman, D.J., Mann, D., Fauci, A.S., Dupont, B., & Gallo, R.C. Alteration of T-cell functions by infection with HTLV-I or HTLV-II. *Science*, 226: 459-462, 1984.
128. Clarke, M.F., Mann, D.L., Murray, C., & Reitz, M.S. Differential methylation of class I histocompatibility genes in human T-cell lines derived from two different T-cell neoplasias. *Leukemia Research*, 8: 965-974, 1984.
129. DeRossi, A., Aldovini, A., Franchini, G., Mann, D., Gallo, R.C., & Wong-Staal, F. Clonal selection of T lymphocytes infected by cell-free human T-cell leukemia/lymphoma virus type I: parameters of virus integration and expression. *Virology*, 143: 640-645, 1985.
130. Clark, J.W., Hahn, B.H., Mann, D.L., Wong-Staal, F., Popovic, M., Richardson, E., Strong, D.M., Lofers, W.S., Blattner, W.A., Gibbs, W.N., & Gallo, R.C. Molecular and immunologic analysis of a chronic lymphocytic leukemia case with antibodies against human T-cell leukemia virus. *Cancer*, 56: 495-499, 1985.
131. Goedert, J.J., Biggar, R.J., Winn, D.M., Mann, D.L., Byar, D.P., Strong, D.M., DiGioia, R.A., Grossman, R.J., Sanchez, W.C., Kase, R.G., Greene, M.H., Hoover, R.N., & Blattner, W.A. Decreased helper T lymphocytes in homosexual men. I. Sexual contact in high incidence areas for the acquired immunodeficiency syndrome. *American Journal of Epidemiology*, 121: 629-636, 1985.
132. Goedert, J.J., Biggar, R.J., Winn, D.M., Mann, D.L., Byar, D.P., Strong, D.M., DiGioia, R.A.,

- Grossman, R.J., Sanchez, W.C., Kase, R.G., Greene, M.H., Hoover, R.N., & Blattner, W.A. Decreased helper T lymphocytes in homosexual men. II. Sexual practices. *American Journal of Epidemiology*. 121: 637-644, 1985.
133. Harris, C.C., Vahakangas, K., Newman, M., Trivers, G.E., Mann, D.L., & Wright, W. Detection of benzo(a)pyrene diol-epoxide-DNA adducts in peripheral blood lymphocytes and antibodies to the adducts in sera from coke oven workers. *Proceedings of the National Academy Sciences USA*. 82: 6672-6676, 1985.
 134. Bale, S.J., Greene, M.H., Murray, C., Goldin, L.R., Johnson, A.H., & Mann, D. Hereditary malignant melanoma is not linked to the HLA complex on chromosome 6. *International Journal of Cancer*, 36: 439-443, 1985.
 135. Hemler, M.E., Jacobson, J.G., Brenner, M.B., Mann, D., & Strominger, J.L. VLA-1: a T-cell surface antigen which defines a novel late stage of human T cell activation. *European Journal of Immunology*, 15: 502-508, 1985.
 136. Boumpas, D.T., Hooks, J.J., Popovic, M., Tsokos, G.C., & Mann, D.L. Human T-cell leukemia/lymphoma virus I and/or Epstein-Barr virus-infected B-cell lines spontaneously produce acid-labile and interferon. *Journal of Clinical Immunology*, 5: 340-344, 1985.
 137. Eiden, M., Newman, M., Fischer, A.G., Mann, D.L., Hawley, P.M., & Reitz, M.S. HTLV-I small envelope protein is expressed in mouse cell using a papilloma virus-derived shuttle vector. *Molecular and Cellular Biology*, 11: 3320-3324, 1985.
 138. Steeg, P.S., Szein, M.B., Mann, D.L., Strong, D.M., & Oppenheim, J.J. Interferon regulation of DR antigen expression and alloantigen-presenting capabilities of the promyelocytic cell line HL60. *Scandinavian Journal of Immunology*. 21: 425-430, 1985.
 139. Weiss, S.H., Mann, D.L., Murray, C.L., & Popovic, M. HLA-DR antibodies and HTLV-III antibody ELISA testing [letter]. *Lancet*, 2: 157-157, 1985.
 140. Franchini, G., Mann, D.L., Popovic, M., Zicht, R.R., Gallo, R.C., & Wong-Staal, F. HTLV-I infection of T and B cells of a patient with adult T-cell leukemia-lymphoma (ATLL) and transmission of HTLV-I from B cells to normal T cells. *Leukemia Research*, 9: 1305-1314, 1985.
 141. Jarrett, R.F., Mitsuya, H., Mann, D.L., Cossman, J., Broder, S., & Reitz, M.S. Configuration and expression of the T cell receptor chain gene in human T-lymphotrophic virus I-infected cells. *Journal of Experimental Medicine*, 163: 383-399, 1986.
 142. Newman, M.J., Baker, I.T., Reitz, M.S., Eiden, M., Blattner, W.A., Gallo, R.C., & Mann, D.L. Serologic characterization of human T-cell leukemia (lymphotropic) virus, type (HTLV-I) small envelope protein. *Virology*. 150: 106-116, 1986.
 143. Boumpas, D.T., Popovic, M., Mann, D.L., Balow, J.E., and Tsokos, G.C. Type C retrovirus of the human T cell leukemia family are not evident in patients with systemic lupus erythematosis. *Arthritis and Rheumatism*. 29: 185-188, 1986.
 144. Boumpas, D.T., Tsokos, G.C., Mann, D.L., Eleftheriades, E.G., Harris, C.C., & Mark, G.E. Increased proto-oncogene expression in peripheral blood lymphocytes from patients with

systemic lupus erythematosus and other autoimmune diseases. *Arthritis and Rheumatism*, 29: 755-760, 1986.

145. Goedert, J.J., Bigger, R.J., Melbye, M., Mann, D.L., Wilson, S., Gail, M.H., Grossman, R.J., DiGiovio, R.A., Sanchez, W.C., Weiss, S.M., & Blattner, W.A. Effect of T4 count and co-factors on AIDS incidence in homosexual men infected with human immunodeficiency virus. *JAMA*, 257: 331-334, 1987.
146. Tschachler, E., Groh, V., Popovic, M., Mann, D.L., Konrad, K., Safai, B., Eron, L., Veronese, F., Wolff, K., & Stingl, G. Epidermal Langerhans cells: a target for HTLV-III/LAV infection. *Journal of Investigative Dermatology*, 88: 233-237, 1987.
147. Harris, C.C., LaVeck, G., Groopman, J., Wilson, V.L., & Mann, D.L. Measurements of aflatoxin B metabolites and DNA adducts by synchronous fluorescence spectrophotometry. *Cancer Research*, 46: 3279-3282, 1987.
148. Smolen, J.S., Klippel, J.H., Penner, M., Steinberg, A.D., Chused, T.M., Shcerak, O., Graninger, W., Mann, D.L., & Mayr, W.R. HLA-DR antigens in systemic lupus erythematosus: association with specificity of autoantibody responses to nuclear antigen. *Annals Rheumatic Diseases*, 46: 457-462, 1987.
149. Mann, D.L., LeSane, F., Popovic, M., Arthur, L.O., Robey, W.G., Blattner, W.A., & Newman, M.J. HTLV-III large envelope protein (gp120) suppresses PHA induced lymphocyte blastogenesis. *Journal of Immunology*, 138: 2640-2644, 1987.
150. Mann, D.L., DeSantis, P., Mark, G., Pfeifer, A., Newman, M., Gibbs, N., Popovic, M., Sarngadharan, M.O., Gallo, R.C., Clark, J., & Blattner, W.A. Indirect role for retrovirus in leukemogenesis. *Science*, 236: 1103-1106, 1987.
151. Harris, C.C., Weston, A., Willey, J.C., Trivers, G.E., & Mann, D.L. Biochemical and molecular epidemiology of human cancer: indicators of carcinogen exposure, DNA damage, and genetic predisposition. *Environmental Health Perspectives*, 75: 109-119, 1987.
152. Shepp, D.H., Daguillard, F., Mann, D., & Quinnan, G.V. Human Class I MHC restricted cytotoxic T lymphocytes specific for human immunodeficiency virus envelope antigens. *AIDS*, 2: 113-117, 1988.
153. Newman, M.J., Light, B.A., Weston, A., Tollerude, D., Clark, J., Mann, D.L., Blackman, J.P., & Harris, C.C. Detection and characterization of human serum antibodies to polycyclic aromatic hydrocarbon diol-epoxide DNA adducts. *Journal of Clinical Investigation*, 82: 145-153, 1988.
154. Weston, A., Rowe, M., Poirier, M., Trivers, G., Vahakangas, K., Newman, M., Haugen, A., Manchester, D., Mann, D., & Harris, C. The application of immunoassays and fluorometry to the detection of polycyclic hydrocarbon-macromolecular adducts and anti-adduct antibodies in humans. *International Archives of Occupational and Environmental Health*, 60: 157-162, 1988.
155. Mann, D.L., Murray, C., Yarchoan, R., Blattner, W.A., & Goedert, J.J. HLA antigen frequencies in HIV seropositive disease-free individuals and patients with AIDS. *J. AIDS*, 1: 13-17, 1988.
156. Mann, D.L., Read-Connole, E., Arthur, L.O., Robey, W.G., Wernet, P., Schneider, E.M., Blattner,

- W.A., & Popovic, M. HLA-DR is involved in the human immunodeficiency virus binding site on cells expressing MHC class II antigens. *Journal of Immunology*, 141: 1131-1137, 1988.
157. Graziano, S.L., Mark, G.E., Murray C., Mann, D.L., Evlich, G., Poiesz, B.J., & Weston, A. DNA restriction fragment length polymorphisms at either end of the *c-raf-1* locus at 3p25. *Oncogene Research*, 3: 99-103, 1988.
 158. Clark, J.W., Gurgo, C., Franchini, G., Gibbs, N.W., Loffers, W., Neuland, C., Mann, D., Saxinger, C., Gallo, R.C., & Blattner, W.A. Molecular epidemiology of HTLV-I associated non-Hodgkin's lymphomas in Jamaica. *Cancer*, 61: 1477-1482, 1988.
 159. Mann, D.L., LeSane, F., Boumpas, D., Dean, M., & Blattner, W.A. HTLV-I infection and chronic lymphocytic leukemia. *Nouvelle Revue Francaise D Hematologie*, 30: 267-273, 1988.
 160. Rappersberger, K., Gartner, S., Schenk, P., Stingl, G., Groh, V., Tschachler, E., Mann, D.L., Wolff, K., Konrad, K., & Popovic, M. Langerhans cells are an actual site of HIV-1 replication. *Intervirology*, 29: 185-194, 1988.
 161. Schneider, E.M., Saal, J.G., Mann, D.L., Pawelec, G., Schneider, J., Schlote, W., & Wernet, P. Respective T- and B cell lymphomas in a married couple: *in vivo* activated T cells lysing both tumor targets and concomitant humoral immune response pointing to a putative novel HLA-class I-like restriction element related to HTLV I. *International Journal of Cancer*, 41: 548-556, 1988.
 162. Manchester, D.K., Weston, A., Choi, J.-S., Trivers, G.E., Fennessey, P.V., Quintana, E., Farmer, P.B., Mann, D.L., & Harris, C.C. Detection of benzo[a]pyrene diol-epoxide-DNA adducts in human placenta. *Proceedings of the National Academy of Sciences USA*, 85: 9243-9247, 1988.
 163. Tollerud, D.J., Clark, J.W., Brown, L.M., Neuland, C.Y., Mann, D.L., Pankiw-Trost, L.K., Blattner, W.A., & Hoover, R.N. Association of cigarette smoking with decreased numbers of circulating natural killer cells. *American Review of Respiratory Disease*, 139-194, 1989.
 164. Weston, A., Rowe, M.L., Manchester, D.K., Farmer, P.B., Mann, D.L., & Harris, C.C. Fluorescence and mass spectral evidence for the formation of benzo[a]pyrene anti-diol-epoxide-DNA and hemoglobin adducts in humans. *Carcinogenesis*, 10: 251-257, 1989.
 165. Haugen, A., Mann, D., Murray, C., Weston, A., & Willey, J.C. Interleukin 1 alpha gene intron containing variable repeat region coding for the SP1 transcription factor recognition sequence is polymorphic. *Molecular Carcinogenesis*, 2: 68-71, 1989.
 166. Weston, A., Willey, J.C., Modali, R., Sugimura, H., McDowell, E.M., Resau, J., Light, B., Haugen, A., Mann, D.L., Trump, B.F., & Harris, C.C. Differential DNA sequence deletions from chromosomes 3, 11, 13 and 17 in squamous-cell carcinoma, large-cell carcinoma, and adenocarcinoma of the human lung. *Proceedings of the National Academy of Sciences USA*, 86: 5099-5103, 1989.
 167. Weston, A., Manchester, D.K., Poirier, M.C., Choi, J.-S., Trivers, G.E., Mann, D.L., & Harris, C.C. Derivative fluorescence spectral analysis of polycyclic aromatic hydrocarbon-DNA adducts in human placenta. *Chemical Research in Toxicology*, 2: 104-108, 1989.
 168. Mann, D.L., O'Brien, S.J., Gilbert, D.A., Reid, Y., Popovic, M., Read-Connole, E., & Gallo, R.C.

Origin of the HIV-susceptible human CD4⁺ cell line H9. *AIDS Research and Human Retroviruses*. 5: 253-255, 1989.

169. Clerici, M., Stocks, N.I., Zajac, R.A., Boswell, R.N., Bernstein, D.C., Mann, D.L., Shearer, G.M., & Berzofsky, J.A. Interleukin-2 production used to detect antigenic peptide recognition by T-helper lymphocytes from asymptomatic HIV-seropositive individuals. *Nature*. 339: 383-385, 1989.
170. Goedert, J.J., Kessler, C.M., Aledort, L.M., Biggar, R.J., Andes, W.A., White, G.C., Drummond, J.E., Vaidya, K., Mann, D.L., Eyster, M.E., Ragni, M.V., Lederman, M.M., Cohen, A.R., Bray, G.L., Rosenberg, P.S., Friedman, R.M., Hilgartner, M.W., Blattner, W.A., Kroner, B., & Gail, M.H. A prospective study of human immunodeficiency virus type 1 infection and the development of AIDS in subjects with hemophilia. *New England Journal of Medicine*, 321: 1141-1152, 1989.
171. Wilson, V.L., Weston, A., Manchester, D.K., Trivers, G.E., Roberts, D.W., Kadlubar, F.F., Wild, C.P., Montesano, R., Willey, J.C., Mann, D.L., & Harris, C.C. Alkyl and aryl carcinogen adducts detected in human peripheral lung. *Carcinogenesis*, 10: 2149-2153, 1989.
172. Tollerud, D.J., Clark, J.W., Brown, L.M., Neuland, C.Y., Mann, D.L., Pankiw-Trost, L.K., Blattner, W.A., & Hoover, R.N. The effects of cigarette smoking on T-cell subsets: a population-based survey of healthy caucasians. *American Review of Respiratory Disease*, 139: 1446-1451, 1989.
173. Tollerud, D.J., Clark, J.W., Brown, L.M., Neuland, C.Y., Mann, D.L., Pankiw-Trost, L.K., Blattner, W.A., & Hoover, R.N. The influence of age, race, and gender on peripheral blood mononuclear cell subsets in healthy nonsmokers. *Journal of Clinical Immunology*, 9: 214-222, 1989.
174. Mann, D.L., Gartner, S., LeSane, F., Blattner, W.A., & Popovic, M. Cell surface antigens and function of monocytes and a monocyte-like cell line before and after infection with HIV. *Clinical Immunology Immunopathology*, 54: 174-183, 1990.
175. Mann, D.L., Gartner, S., LeSane, F., Buchow, H., & Popovic, M. HIV-1 transmission and function of virus-infected monocytes/macrophages. *Journal of Immunology*, 144: 2152-2158, 1990.
177. Weston, A., Newman, M.J., Mann, D., & Brooks, B.R. Molecular mechanics and antibody binding in the structural analysis of polycyclic aromatic hydrocarbon-diol-epoxide-DNA-adducts. *Carcinogenesis*, 11: 859-864, 1990.
178. Stingl, G., Rappersberger, K., Tschachler, E., Gartner, S., Groh, V., Mann, D.L., Wolff, K., & Popovic, M. Langerhans cells in HIV-1 infection. *Journal of the American Academy of Dermatology*, 22: 1210-1217, 1990.
179. Manchester, D.K., Wilson, V.L., Hsu, I.-C., Choi, J.-S., Parker, N.B., Mann, D.L., Weston, A., & Harris, C.C. Synchronous fluorescence spectroscopic, immunoaffinity chromatographic and ³²P-postlabeling analysis of human placental DNA known to contain benzo[a]pyrene-diol-epoxide-adducts. *Carcinogenesis*, 11: 553-559, 1990.
180. Harris, P.E., Strba-Cechova, K., Rubinstein, P., Mann, D., King, D.W., & Suciu-Foca, N. Amplification of T cell blastogenic responses in healthy individuals and patients with acquired

immunodeficiency syndrome. *Journal of Clinical Investigation*, 85: 746-756, 1990.

181. Tollerud, D.J., Ildstad, S.T., Brown, L.M., Clark, J.W., Blattner, W.A., Mann, D.L., Neuland, C.Y., Pankiw-Trost, L., & Hoover, R.N. T-cell subsets in healthy teenagers: transition to the adult phenotype. *Clinical Immunology Immunopathology*, 56: 88-96, 1990.
182. Rappersberger, K., Tschachler, E., Zonzits, E., Gillitzer, R., Hatzakis, A., Kaloterakis, A., Mann, D.L., Popow-Kraupp, T., Biggar, R.J., Berger, R., Stratigos, J., Wolff, K., & Stingl, G. Endemic Kaposi's sarcoma in human immunodeficiency virus type 1-seronegative persons: demonstration of retrovirus-like particles in cutaneous lesions. *Journal of Investigative Dermatology*, 95: 371-381, 1990.
183. Mann, D.L., Murray, C., O'Donnell, M., Blattner, W.A., & Goedert, J.J. HLA antigen frequencies in HIV-1-related Kaposi's sarcoma. *J. AIDS*, 3: 51-55, 1990.
184. Korba, B.E., Boumpas, D., Mann, D., & Yoakum, G.H. Direct modulation of HBV surface antigen in a human, Hbsag-producing hepatocellular carcinoma cell line by alpha, beta, or gamma interferons. *Journal of Medical Virology*, 31(4): 272-6, 1990.
185. Pfeifer, A.M.A., Jones, R.T., Bowden, P.E., Mann, D.L., Spillare, E., Klein-Szanto, A.J.P., Trump, B.F., & Harris, C.C. Human bronchial epithelial cells transformed by the c-raf-1 and c-myc proto-oncogenes induce multidifferentiated carcinomas in nude mice: a model for lung carcinogenesis. *Cancer Research*, 51: 3793-3801, 1991.
186. Newman, M.J., Weston, A., Carver, D.C., Mann, D.L., & Harris, C.C. Serological characterization of polycyclic aromatic hydrocarbon diol-epoxide-DNA adducts using monoclonal antibodies. *Carcinogenesis*, 11: 1903-1907, 1991.
187. Tollerud, D.J., Brown, L.M., Clark, J. W., Neuland, C.Y., Mann, D.L., Pankiw-Trost, L.K., & Blattner, W.A. Cryopreservation and long-term liquid nitrogen storage of peripheral blood mononuclear cells for flow cytometry analysis: effects on cell subset proportions and fluorescence intensity. *Journal of Clinical and Laboratory Analysis*, 5: 255-261, 1991.
188. Madrigal J.A., Belich, M.P., Benjamin, R.J., Little, A.-M., Hildebrand, W.H., Mann, D.L., & Parham P. Molecular definition of a polymorphic antigen (LA45) of free HLA-A and -B heavy chains found on the surfaces of activated B and T cells. *Journal of Experimental Medicine*, 174: 1085-1095, 1991.
189. Tollerud, D.J., Brown, L.M., Blattner, W.A., Mann, D.L., Pankiw-Trost, L., & Hoover, R.N. T cell subsets in healthy black smokers and nonsmokers evidence for ethnic group as an important response modifier. *American Review of Respiratory Disease*, 144: 612-616, 1991.
190. Blackburn, R., Clerici M., Mann, D., Luccy, D.R., Goedert J., Golding B., Shearer, G.M., & Golding, H. Common sequence in HIV-1, GP41 and HLA class II beta chains can generate crossreactive autoantibodies with immunosuppressive potential early in the course of HIV-1 infection. *Advances in Exper Medicine & Biology*, 303: 63-9, 1991.
191. O'Brien, S.J. & Mann, D.L. Adaptive chaos and AIDS. *Current Biology*, 2: 203-205, 1992.
192. Martin, P. M., Carrington, M., & Mann, D. L. A method for using serum or plasma as a source of

DNA for HLA typing. *Human Immunology*, 33: 108-113, 1992.

193. Carrington, M.N., White, M.B., Dean, M., Mann, D.L., & Ward, F.E. The use of DNA heteroduplex patterns to map recombination within the HLA class II region. *Human Immunology*, 33: 114-121, 1992.
194. Carrington, M.N., Miller, T., White, M.B., Gerrard, B., Stewart, C., Dean, M., & Mann, D.L. Typing of HLA-DQA1 and -DQB1 using DNA single-strand conformation polymorphism. *Human Immunology*, 33: 208-212, 1992.
195. Mann, D.L., Carrington, M., O'Donnell, M., Miller, T., & Goedert, J. HLA phenotype is a factor in determining rate of disease progression and outcome in HIV-1 infected individuals. *J. Aids Research and Human Retroviruses*, 8: 1345-1346, 1992.
196. Arthur, L.O., Bess, Jr., J.W., Sowder, II, R.C., Benveniste, R.E., Mann, D.L., Chermann, J.C., & Henderson, L.E. Cellular Proteins Bound to Immunodeficiency Viruses: Implications for Pathogenesis and Vaccines. *Science*, 258: 1935-1938, 1992.
197. Carrington, M., Colonna, M., Spies, T., Stephens, J.C., & Mann, D.L. Haplotypic variation of the transporter associated with antigen processing (TAP) genes and their extension of HLA class II region haplotypes. *Immunogenetics*, 37: 266-273, 1993.
198. Martin, M.P., Biggar, R.J., Hamlin-Green, G., Staal, S., & Mann, D.L. Large Granular Lymphocytosis in a Patient Infected with HTLV-II. *AIDS Research and Human Retroviruses*, 9: 715-719, 1993.
199. Carrington, M.N., Yeager, M., & Mann, D.L. Characterization of HLA-DMB Polymorphism. *Immunogenetics*, 38: 446-449, 1993.
200. Mann, D.L., Hamlin-Green, G., Willoughby, A., Landesman, S.H., & Goedert, J.J. Immunoglobulin Class and Subclass Antibodies to HIV Proteins in Maternal Serum: Association with Perinatal Transmission. *JAIDS*, 7: 617-622, 1994.
201. Mann, D.L., Carrington, M., & Kroner, B.L. The Human Major Histocompatibility Complex and HIV-1 Pathogenesis. *AIDS*, 8: S53-S60, 1994.
202. Kaslow, R.A., & Mann, D.L. The Role of the Major Histocompatibility Complex in HIV Infection- Ever More Complex? *Journal of Infectious Diseases*, 169: 1332-1333, 1994.
203. Mann, D.L., Martin, P., Hamlin-Green, G., Nalewaik, R., & Blattner, W. Virus Production and Spontaneous Cell Proliferation in HTLV-I-Infected Lymphocytes. *Clinical Immunology and Immunopathology*, 72: 312-320, 1994.
204. Carrington, M., Stephens, J.C., Klitz, W., Begovich, A.B., Erlich, H.A., & Mann, D. MHC Class II Haplotypes and Linkage Disequilibrium Values Observed in the CEPH Families. *Human Immunology*, 41: 234-240, 1994.
205. Carrington, M., Krueger, L.J., Holsclaw, D.S., Jr., Iannuzzi, M.C., Dean, M., & Mann, D. Cystic Fibrosis-Related Diabetes is Associated with HLA-DQB1 Alleles Encoding Asp-57 Molecules. *Journal of Clinical Immunology*, 14: 353-358, 1994.

206. Martin, M., Mann, D., & Carrington, M. Recombination Rates across the HLA Complex: Use of Microsatellites as a Rapid Screen for Recombinant Chromosomes. *Human Molecular Genetics*. 4: 423-428. 1995.
207. Kroner, B.L., Goedert, J.J., Blattner, W.A., Wilson, S.E., Carrington, M.N., & Mann, D.L. Concordance of HLA Haplotype Sharing, CD4 Decline and AIDS Status in Hemophilic Siblings. *AIDS*, 9: 275-280, 1995.
208. Arthur, L.O., Bess, Jr., J.W., Urban, R.G., Strominger, J.L., Morton, W.R., Mann, D.L., Henderson, L.E., & Benveniste, R.E. Macaques immunized with HLA-DR are protected from challenge with simian immunodeficiency virus. *Journal of Virology*. 69: 3117-3124, 1995.
209. Barron, K.S., Reveille, J.D., Carrington, M., Mann, D.L., & Robinson, M.A. Susceptibility to Reiter's Syndrome is Associated with Alleles of TAP Genes. *Journal of Arthritis and Rheumatism*, 38: 684-689, 1995.
210. Lunardi-iskandar, Y., Gill, P., Lam, V., Zeman, R.A., Michaels, F., Mann, D.L., Reitz, Jr., M.S., Kaplan, M., Berneman, Z.N., Carter, D., Bryant, J.L., & Gallo, R.C. A Neoplastic Cell Line (KS Y-1) from HIV-1-Associated Kaposi's Sarcoma: Evidence for Malignancy. *Journal of National Cancer Institute*. 87: 973-981, 1995.
211. Maloney, E., Pate, E., Wiktor, S.Z., Morais, P., Mann, D., Gray, R., Manns, A., & Blattner, W.A. The relative distribution of T-cell subsets is altered in Jamaican children infected with the human T-cell lymphotropic virus Type-I (HTLV-I). *Journal of Infectious Disease*. 172: 867-870. 1995.
212. Detels, R., Mann, D.L., Carrington, M., Hennessey, K., Wu, Z., Hirji, K.F., Wiley, D., Visscher, B.R., & Giorgi, J.V. Resistance to HIV infection may be genetically mediated. *AIDS*. 10: 102-104, 1996.
213. Kurotochi, K., Carrington, M., Mann, D., Simons, T.B., Alexander-Miller, M.A., Feinstone, S.M., Akatsulca, T., & Bersofsky, J.A. Expression of HLA Class I molecule and the transporter associated with antigen processing in hepatocellular carcinoma. *Hepatology*. 23: 1181-1188, 1996.
214. Kaslow, R.A., Carrington, M., Apple, R., Park, L., Munoz, A., Saah, A.J., Goedert, J.J., Winkler, C., O'Brien, S.J., Rinaldo, C., Detels, R., Blattner, W., Phair, J., Erlich, H., & Mann, D.L. Influence of combinations of human major histocompatibility complex genes on the course of HIV-1 infection. *Nature Medicine*, 2: 405-411, 1996.
215. Detels, R., Mann, D., Carrington, M., Wu, Z., Hennessey, K., Wiley, D., Visscher, B.R., & Giorgi, J.V. Persistently seronegative men from whom HIV-1 has been isolated are genetically and immunologically distinct. *Immunology Letters*. 51: 29-33, 1996.
216. Tsukui, T., Hildesheim, A., Schiffman, M.H., Lucci, J. III, Contois, D., Lawler, P., Rush, B., Lorincz, A.T., Corrigan, A., Burk, R.D., Qu, W., Marshall, M.A., Mann, D., Carrington, M., Clerci, M., Shearer, G.M., Carbone, D.P., Scott, D.R., Houghten, R.A., & Berzofsky, J.A. IL-2 production in vitro by peripheral lymphocytes in response to human papillomavirus-derived peptides: Correlation with cervical pathology. *Cancer Research*. 56: 3967-3974, 1996.

217. Carrington, M., Wei-Ya Ma, Stephans, J.C., Martin, M., Harding, A., Noble, J., Erlich, H., Mann, D., Arango, C., Jaramillo, R., Coucha, M., Maloney, E., & Blattner, W. Identification of a novel Tap 2 allele in a Colombian black population: Gene conversion, ancestral intermediate or convergent change? *Molecular Biology and Evolution*, 14(8): 892-894, 1997.
218. Nelson, G.W., Kaslow, R., & Mann, D.L. Frequency of HLA allele-specific peptide motifs in HIV-1 protein correlates with the alleles association with relative rates of disease progression after HIV-1 infection. *Proceedings of the National Academy of Sciences, USA*, 94: 9802-9807, 1997.
219. Ratto-Kim, S., Sitz, K.V., Scherer, A.M., Kim, J.H., Anderson, D.W., Nau, M.E., Mann, D.L., Akolkar, P.N., Gulwani-Akolkar, B., Silver, J., & Birx, D.L. Comparison of HIV-1 envelope-specific CD4+ T cell lines simultaneously established from peripheral blood mononuclear cells and lymph node biopsy in HIV-1-infected individuals. *The Journal of Immunology*, 159: 5162-5167, 1997.
220. Wilson, S.E., Pedersen, S.L., Kunich, J.C., Wilkins, V.L., Mann, D.L., Mazzara, G.P., Tartaglia, J., Celum, C.L. & Sheppard, H.W. Cross-clade envelope glycoprotein 160-specific CD8+ cytotoxic T lymphocyte responses in early HIV type 1 clade B infection. *AIDS Research & Human Retroviruses*, 14: 925-937, 1998.
221. Mann, D.L., Garner, R.P., Dayhoff, D.E., Cao, K., Fernandez-Vina, M.A., Davis, C., Aronson, N., Ruiz, N., Birx, D.L., & Michael, N.L. Major histocompatibility complex genotype is associated with disease progression and virus load levels in a cohort of human immunodeficiency virus type 1-infected Caucasians and African-Americans. *Journal of Infectious Diseases*, 178: 1799-1802, 1998.
222. Lynch, J.A., deSouza, M., Robb, M.D., Markowitz, L., Nitayaphan, S., Sapan, C.V., Mann, D.L., Birx, D.L., & Cox, J.H. Cross-clade cytotoxic T cell response to human immunodeficiency virus type 1 proteins among HLA disparate North Americans and Thais. *Journal of Infectious Diseases*, 178(4): 1040-1046, 1998.
223. Saah, A.J., Hoover, D.R., Weng, S., Carrington, M., Mellors, J., Rinaldo, C.R. Jr., Mann, D., Apple, R., Phair, J.P., Detels, R., O'Brien, S., Enger, C., Johnson, P., & Kaslow, R.A. for the Multicenter AIDS Cohort Study: Association of HLA profiles with early plasma viral load, CD4+ cell count and rate of progression to AIDS following acute HIV-1 infection. *J AIDS*, 12: 2115-2124, 1998.
224. Papadimitriou, J.C., Drachenberg, C.B., Klassen, D.K., Bartlett, S.T., & Mann, D.L. Transmission of malignant tumors through solid organ transplantation. *Pathology Case Reviews*, 3(2): 86-89, 1998.
225. Lim, J.K., Hunter, J., Fernandez-Vina, M., & Mann, D.L. Characterization of LMP polymorphism in homozygous typing cells and a random population. *Human Immunology*, 60: 145-151, 1999.
226. Berlyn, K.A., Ponniah, S., Stass, S.A., Malone, J.G., Hamlin-Green, G., Lim, J.K., Cottler-Fox, M., Tricot, G., Alexander, R.B., Mann, D.L., & Malone, R.W. Developing dendritic cell polynucleotide vaccination for prostate cancer immunotherapy. *Journal of Biotechnology*, 73: 155-179, 1999.
227. Keet, I.P.M., Tang, J., Klein, M.R., LeBlanc, S., Enger, C., Rivers, C., Apple, R.J., Mann, D.

- Goedert, J.J., Miedema, F., & Kaslow, R.A. Consistent associations of HLA Class I and II and transporter gene products with progression of human immunodeficiency virus Type 1 infection in homosexual men. *J Infect Dis*, 180: 299-309, 1999.
228. Berlyn, K.A., Schultes, B., Leveugle, B., Noujaim, A.A., Alexander, R.B., & Mann, D.L. Generation of CD4+ and CD8+ T lymphocyte responses by dendritic cells armed with PSA/anti-PSA (antigen:antibody) complexes. *Clinical Immunology*, 101(3): 276-83, 2001.
 229. Sidney, J., Southwood, S., Mann, D.L., Fernandez-Vina, M.A., Newman, M.J., & Sette, A. Majority of peptides binding HLA-A*0201 with high affinity crossreact with other A2-supertype molecules. *Human Immunology*, 62: 1200-1216, 2001.
 230. Fischer, G.F., Fae, I., Mann, D., Kriks, D., Jäger, W., Platzer, W., Mayr, W.R., & Volc-Platzer, B. An HLA Class-II allele frequent in Eskimos and Amerindians is found in the Tyrolean Ice Man. *Annals of Human Genetics*, 65: 363-369, 2001.
 231. Hankey, K.G., Drachenberg, C.B., Papadimitriou, J.C., Klassen, D.K., Philosophe, B., Bartlett, S.T., Groh, V., Spies, T., & Mann, D.L. MIC expression in renal and pancreatic allografts. *Transplantation*, 73(2): 304-306, 2002.
 232. Karp, J.E., Ross, D.D., Yang, W., Tidwell, M.L., Wei, Y., Greer, J., Mann, D.L., Nakanishi, T., Wright, J.J., & Colevas, A.D. Timed sequential therapy of acute leukemia with flavopiridol: In vitro model for a phase I clinical trial. *Clinical Cancer Research*, 9: 307-315, 2003.
 233. Koopman, G., Niphuis, H., Haaksma, A.G.M., Farese, A.M., Casey, D.B., Kahn, L.E., Mann, D., MacVittie, T.J., Woulfe, S.L., & Heeney, J.L. Increase in plasmacytoid and myeloid dendritic cells by progenipoietin-1, a chimeric Flt-3 and G-CSF receptor agonist, in SIV-infected rhesus macaques. *Human Immunology*, 65: 303-316, 2004.
 234. Rapoport, A.P., Levine, B.L., Badros, A., Meisenberg, B., Ruehle, K., Nandi, A., Rollins, S., Natt, S., Ratterree, B., Westphal, S., Mann, D., & June, C.H. Molecular remission of CML after autotransplantation followed by adoptive transfer of costimulated autologous T-cells. *Bone Marrow Transplantation*, 33(1): 53-60, 2004.
 235. Klyushnenkova, E.N., Ponniah, S., Rodriguez, A., Kodak, J., Mann, D.L., Langerman, A., Nishimura, M.I., & Alexander, R.B.: CD4 and CD8 T lymphocyte recognition of prostate specific antigen in granulomatous prostatitis. *Journal of Immunotherapy*, 27(2): 136-46, 2004.
 236. Cao, K., Moormann, A.M., Lyke, K.E., Masaberg, C., Sumba, O.P., Doumbo, O.K., Koech, D., Lancaster, A., Nelson, M., Meyer, D., Single, R., Hartzman, R.J., Plowe, C.V., Kazura, J., Mann, D.L., Sztein, M.B., Thomson, G., & Fernandez-Vina, M.A. Differentiation between African populations is evidenced by the diversity of alleles and haplotypes of HLA class I loci. *Tissue Antigens*, 63(4): 293-325, 2004.
 237. Alexander, R.B., Mann, D.L., Borkowski, A.A., Fernandez-Vina, M., Klyushnenkova, E.N., Kodak, J., Probert, K.J., & Kincaid, M. Granulomatous prostatitis linked to HLA-DRB1*1501. *The Journal of Urology*, Jun, 171(6 Pt 1): 2326-9, 2004.
 238. Yusibov, V., Mett, V., Davidson, C., Musychuk, K., Gilliam, S., Farese, A., MacVittie, T., & Mann, D. Peptide-based candidate vaccine against respiratory syncytial virus. *Vaccine*, Mar.

23(17-18):2261-5, 2005.

239. Drachenberg, C.B., Papadimitriou, J.C., Mann, D., Hirsch, H.H., Wali, R., & Ramos, E. Negative impact of human leukocyte antigen matching in the outcome of polyomavirus nephropathy. *Transplantation*, 80(2):276-278, 2005.
240. Koopman, G., Mortier, D., Niphuis, H., Farese, A.M., Kahn, L.E., Mann, D., Wagner, R., MacVittie, T.J., Woulfe, S.L., & Heeney, J.L. Systemic mobilization of antigen presenting cells, with a chimeric Flt-3 and G-CSF receptor agonist, during immunization of *Macaca mulatta* with HIV-1 antigens is insufficient to modulate immune responses or vaccine efficacy. *Vaccine*, 23(33):4195-4202, 2005.
241. Rapoport, A.P., Stadtmauer, E.A., Aqui, N., Badros, A., Cotte, J., Chrisley, L., Veloso, E., Zheng, Z., Westphal, S., Mair, R., Chi, N., Ratterree, B., Pochran, M.F., Natt, S., Hinkle, J., Sickles, C., Sohal, A., Ruehle, K., Lynch, C., Zhang, L., Porter, D.L., Luger, S., Guo, C., Fang, H.B., Blackwelder, W., Hankey, K., Mann, D., Edelman, R., Frasch, C., Levine, B.L., Cross, A., & June, C.H. Restoration of immunity in lymphopenic individuals with cancer by vaccination and adoptive T-cell transfer. *Nature Medicine* 11(11):1230-1237, 2005.

Chapters

1. Mann, D.L., Comparison of HL-A alloantigen solubilized by papain and TIS. In: Kahan, B. D. and Reisfeld, R. A. (Eds.). *Transplantation Antigens*. New York and London, Academic Press, pp. 287-297, 1972.
2. Mann, D.L., le Pourhiet, A., Leventhal, B.G., & Halterman, R. Studies on the immunologic reactivity of serums from acute leukemia patients. In: Richard, V. (Ed.), *Progress in Experimental Tumor Research*. Basel, S. Karger, pp. 102-109, 1974.
3. Strominger, J.L., Chess, L., Herrmann, H.C., Humphreys, R.E., Malenka, D., Mann, D.L., McCune, J.M., Parham, P., Robb, R., Springer, T.A., & Terhorst, C. Isolation of histocompatibility antigens and of several B cell specific proteins from cultured human lymphocytes. In: Kissmeyer-Nielsen, F. (Ed.), *Histocompatibility Testing 175*. Copenhagen, Munksgaard, pp. 719-730, 1975.
4. Mann, D.L., Strober, W., Katz, S.I., Hsia, S., & Amos, D.B. Brand Wh, B cell antigens in gluten sensitive enteropathy and dermatitis herpetiformis. In: Katz, D. H. and Benacerraf, B. (Eds.), *The Role of Products of the Histocompatibility Gene Complex in Immune Responses*. New York, Academic Press, pp. 59-69, 1976.
5. Abelson, L., Henkart, P., & Mann, D.L. Typing for specific B lymphocyte antigens. In: Rose, N. R. and Friedman, H. (Eds.), *Manual of Clinical Immunology*. Washington DC, American Society for Microbiology, pp. 811-813, 1976.
6. Strominger, J.L., Chess, L., Humphreys, R.E., Mann, D.L., Parham, P., Robb, R., Schlossman, S., Springer, T., & Terhorst, C. Isolation and structure of products of the human histocompatibility gene complex. In Katz, D. H. and Benacerraf, B. (Eds.), *The Role of the Histocompatibility Gene Complex in Immune Responses*. New York, Academic Press, pp. 621-643, 1976.

7. Mann, D.L., Abelson, L., Henkart, P., Harris, S., & Amos, D.B. Serologic detection of B lymphocyte antigens. In: Kissmeyer-Nielsen, F.(Ed.), *Histocompatibility Testing* 175. Copenhagen. Munksgaard, pp. 705-707, 1976.
8. Strominger, J.L., Humphreys, R.E., Kaufman, J.F., Mann, D.L., Parham, P., Robb, R., Springer, T., & Terhorst, C. The structure of products of the major histocompatibility complex in man. In: Melchers, F. and Rajewsky, K. (Eds.), *27 Mosbacher Colloquium*. Berlin. Springer-Verlag, pp 202-219, 1976.
9. Strominger, J.L., Ferguson, W., Fuks, A., Giphart, M., Kaufmann, J., Mann, D.L., Orr, H., Parham, P., Robb, R., & Terhorst, C. Isolation and structure of HLA antigens. In: Mandel, T. E., Cheers, C., Hosking, C. S., McKenzie, I. C. F., and Nossal, G. J. V. (Eds.), *Progress in Immunology*. New York, Elsevier/North-Holland, Inc., pp. 109-117, 1977.
10. Strominger, J.L., Ferguson, W., Fuks, A., Giphart, M., Kaufmann, J., Mann, D.L., Orr, H., Parham, P., Robb, R., & Terhorst, C. Isolation and structure of HLA antigens. In: Lerner, R. A. and Bergsma, D. (Eds.), *The Molecular Basis of Cell-Cell Interaction. Birth Defects: Original Article Series, Vol. XIV*. New York, Alan R. Liss, Inc., pp. 235-246, 1978.
11. Strominger, J.L., Ferguson, W., Fuks, A., Kaufman, J., Orr, H., Parham, P., Robb, R., Terhorst, C., Gilphart, M., & Mann, D. Isolation and structure of HLA antigens. In: Clarkson, B. (Ed.), *Differentiation of Normal and Neoplastic Hematopoietic Cells*. New York. Cold Spring Harbor Press. pp. 467-478, 1978.
12. Stingl, G., Katz, S.I., Shevach, E.M., Clement, L., Green, I., & Mann, D.L. Immunogenetical markers on epidermal cells. In: Thivolet, J. (Ed.), *Cutaneous Immunopathology, Vol. 80*. Paris. INSERM, pp. 173-180, 1978.
13. Chused, T.M., Moutsopoulos, H.M., Johnson, A.H., & Mann, D.L. Ia-antigens in Sjogren's syndrome. In: Rose, N. R., Bigazzi, P. E., and Warner, N. L. (Eds.), *Genetic Control of Autoimmune Disease*. New York, Elsevier North-Holland, pp. 342-345, 1978.
14. Mann, D.L. Leukemia associated antigens. In: Rose, N. (Ed.), *Immunodiagnosis of Cancer, Vol. 2*. New York, Marcel Dekker, Inc., pp. 874-886, 1979.
15. Sachs, D.H., El-Gamil, M., Kiskiss, P., Lunney, J.K., Mann, D.L., Ozato, K., & Shinohara, N. Ia antigen cross-reactions between species. In: Bach, F., Bonavida, B., Vitetta, E., and Fox, C. F. (Eds.), *T and B Lymphocytes: Recognition and Function*. New York, Academic Press, pp. 15-29, 1979.
16. Mann, D.L. Evidence that more than one gene locus controls expression of human B-cell alloantigens. In: Bach, F., Bonavida, B., Vitetta, E., and C. F. (Eds.), *T and B Lymphocytes: Recognition and Function*. New York. Academic Press. pp. 31-35, 1979.
17. Broder, S., Muul, L., Durm, M., Goldman, C., Mann, D., & Waldmann, T. T-T interactions in the generation of human suppressor effector cells in vitro. In: Fauci, A. (Ed.), *In Vitro Induction and Measurements of Synthesis in Man*. New York, Academic Press. pp. 69-84. 1979.
18. Mann, D.L. & Murray, C. HLA alloantigens: Disease Associations and Biologic Significance. In:

Fudenberg, H. and Jaffe, E. (Eds.), *Seminars in Hematology* Vol. 16. New York, Grune and Stratton. pp. 293-308, 1979.

19. Rosenthal, A.S., Blake, J.T., Kahn, C.R., & Mann, D.L. Genetic control of immune response to insulin: a clinical study of adverse immunologic reactions to insulin. In: Bradenberg, D. (Ed.), *Proc. of 2nd International Insulin Symposium*. Berlin, Walter deGruyter and Co., pp. 585-592, 1980.
20. Mann, D.L. The genetics of B cell alloantigens. In: Resifeld, R. (Ed.), *Current Trends in Histocompatibility*. New York, Plenum Press, pp. 199-207, 1981.
21. Strominger, J.L., Engelhard, V.H., Fuks, A., Guild, B.C., Hyafil, F., Kaufman, J.F., Korman, A.J., Kastuk, T.G., Krangel, M.S., Lancet, D., Loepz de Cistro, J.A., Mann, D.L., Orr, H.T., Parham, P., Parker, K.C., Pleogh, H.L., Prober, J.S., Robb, R.J., & Shackelford, D.A. The biochemical analysis of products of the major histocompatibility complex. In: Dorf, M. E. (Ed.), *The Roles of the Major Histocompatibility Complex in Immunology*. New York, Garland Press, pp. 115-171, 1981.
22. Murray, C. & Mann, D.L. B-lymphocyte isolation for HLA-DRw typing. *AACHT Tissue Typing Manual*. New York, AACHT, pp. 106-111, 1981.
23. Haynes, B.F., Hemler, M.E., Mann, D.L., Eisenbarth, G.S., Strominger, J.L., & Fauci, A.S. Characterization of a monoclonal antibody which binds to human monocytes. In: Forster, O. and Landy, M. (Eds.), *Heterogeneity of Mononuclear Phagocytes*. London and New York, Academic Press, pp. 53-59, 1981.
24. Mann, D.L., Rosenthal, A.S., Kahn, R., Johnson, A.H., & Mendell, N. A study of HLA alloantigen frequencies in insulin allergic and non-allergic diabetics. In: Keck, K. and Erb, P. (Eds.), *Basic and Clinical Aspects of Immunity to Insulin*. Berlin, Walter de Gruyter and Co., pp. 275-284, 1981.
25. Broder, S., Uchiyama, T., Muul, L., Muchmore, A., Blaise, R.M., & Mann, D.L. Activation of regulatory cells by antibodies to human Ia-like antigens. In: Fauci, A. and Bellicux, R. (Eds.), *Human B-cell Function, Activation, and Immunoregulation*. New York, Raven Press, pp. 289-297, 1982.
26. Gerber, L.-H., Murray, C.L., Perlman, S.G., Mann, D.L., Decker, J.L., Barth, W.F., & Nigra, T.P. Human lymphocyte antigens characterizing psoriatic arthritis. In: Farber, E. M., Cox, A. J., Wall, L. and Jacobs, P. H. (Eds.), *Psoriasis*. New York, Grune and Stratton, pp. 289-291, 1982.
27. Blattner, W.A., Greene, M-H., Goedert, J.J., & Mann, D.L. Interdisciplinary studies in the evaluation of persons at high risk of cancer. In: Harris, C. C. and Autrup, H. A. (Eds.), *Human Carcinogenesis*. New York, Academic Press, pp. 913-939, 1983.
28. Reitz, M.S., Mann, D., Clarke, M.F., Kalyanaraman, V.S., Robert-Guroff, M., Popovic, M., & Gallo, R.C. Presence of HTLV in a subset of T cells from an infected patient: some immunochemical properties. In: Neth, A., Gallo, R., Greaves, T., Moore, G., and Winkler, A. (Eds.), *Hematology and Blood Transfusion*. Vol. 28. Berlin, Springer-Verlag, pp. 459-461, 1983.
29. Reitz, M.S., Mann, D., Clarke, M.F., Kalyanaraman, V.S., Robert-Guroff, M., Popovic, M., & Gallo, R.C. Presence of HTLV in a subset of T cells from an infected patient: some immunochemical properties of the infected cells. In: Neth, A., Gallo, R., Greaves, T., Moore, G., and Winkler, A.

(Eds.), Hematology and Blood Transfusion. Modern Trends in Human Leukemia V, Vol. 28. Heidelberg, Springer-Verlag, pp. 459-461, 1983.

30. Szein, M., Steeg, P., Oppenheim, J.J., Stiehm, R., Mann, D.L. & Blaes, M. Modulation of human cord blood monocyte DR antigen expression in vitro by lymphokines and interferon. In: Oppenheim, J. J. and Cohen, S. (Eds.), Interleukins, Lymphokines, and Cytokines. New York, Academic Press, pp. 299-305, 1983.
31. Rosenthal, A.S., Mann, D.L., & Kahn, C.R. Genetic control of the immune response to insulin in man and animal. In: Gupta, S. (Ed.), Immunology of Clinical and Experimental Diabetes. New York, Plenum Press, pp. 51-71, 1984.
32. Popovic, M., Kalyanaraman, V.S., Mann, D.L., Richardson, E., Sarin, P.S., & Gallo, R.C. Infection and transformation of T cells by human T-cell leukemia/lymphoma virus of subgroups I and II (HTLV-I, HTLV-II). In: Gallo, R. C., Essex, M. E., and Gross, L. (Eds.), Human T-Cell Leukemia/Lymphoma Viruses. New York, Cold Spring Harbor Laboratory Press, pp. 217-227, 1984.
33. Reitz, M.S., Jr., Clarke, M.F., Mann, D.L., & Gallo, R.C. Human T-cell leukemia/lymphoma virus and Class-I major histocompatibility antigens. In: Gallo, R. C., Essex, M. E., and Gross, L. (Eds.), Human T-Cell Leukemia/Lymphoma Viruses. New York, Cold Spring Harbor Laboratory Press, pp. 181-187, 1984.
34. Harris, C.C., Vahakangas, K., Autrup, H., Trivers, G.E., Shamsuddin, A.K.M., Trump, B.F., Boman, B.M., & Mann, D.L. Biochemical and molecular epidemiology of human cancer risk. In: Scarpelli, D., Craighead, J., and Kaufman, N. (Eds.), Pathologist and the Environment. Baltimore, Williams and Wilkins, pp. 140-167, 1985.
35. Blattner, W.A., Clark, J.W., Gibbs, W. N., Williams, C.K.O., Nomura, A., Mann, D., Saxinger, C., Robert-Guroff, M. & Gallo, R.C. HTLV: Epidemiology and Relationship to Disease. In: Miwa, M., Sugano, H., Sugimura, T., and Weiss, R. A. (Eds.), Retroviruses in Human Lymphoma/Leukemia. Tokyo, Sci. Soc. Press, Tokyo/VNU Science Press, pp. 93-108, 1985.
36. Yoakum, G.H., Korba, B.E., Boumpas, D.C., Mann, D.L., & Harris, C.C. The molecular biology of human hepatitis B virus infection UCLA symposium on molecular and cellular biology. In: Harris, C. C. (Ed.), Biochemical and Molecular Epidemiology of Cancer. New York, Alan R. Liss, Inc., pp. 271-282, 1986.
37. Masui, T., Lechner, J.F., Mark, G.E., Pfeiffer, A-M. A., Miyashita, M., Yoakum, G.H., Willey, J.C., Mann, D.L., & Harris, C.C. Growth and differentiation programs of normal and transformed bronchial epithelial cells. In: Colburn, N. H., Moses, H. L., and Stanbridge, E. J. (Eds.), UCLA Symposium on Molecular and Cellular Biology, Vol. 32. New York, Alan R. Liss, Inc., pp. 191-202, 1987.
38. Weston, A., Trivers, G., Vahakangas, K., Newman, M., Rowe, M., Mann, D. & Harris, C.C. Detection of carcinogen DNA adducts in human cells and antibodies to these adducts in human sera. In: Homburger, F. (Ed.), Progress in Experimental Tumor Research. Basel, S. Karger, pp. 76-85, 1987.
39. Weston, A., Newman, M., Vahakangas, K., Rowe, M., Mann, D.L., & Harris, C.C. Measurement of

carcinogen-macromolecular adducts and serum antibodies recognizing DNA-adducts in biological specimens from people exposed to chemical carcinogens. In: Sandhu, S. S., Claxton, L. D., DeMarini, D. M., Mass, M. J., Moore, M. M., and Mumford, J. L. (Eds.), *Short-term Bioassays in the Analysis of Complex Environmental Mixtures V*. New York, Plenum Press, pp. 91-102, 1987.

40. Mann, D.L., Immunogenetics of Sjogren's syndrome. In: Talal, N., Moutsopoulos, H. M., and Kassen, S. S. (Eds.), *Sjogren's Syndrome*. Berlin, Springer-Verlag, pp. 235-243, 1987.
41. Weston, A., Willey, J.C., Newman, M., Trivers, G.E., Haugen, A., Manchester, D., Choi, J.S., Krontiris, T., Light, B., Mann, D., & Harris, C.C. Application of biochemical and molecular techniques to the epidemiology of human lung cancer. In: Miners, J. O., Birkett, D. J., Drew, R., May, B., and McManus, M. (Eds.), *Microsomes and Drug Oxidations*. London, Taylor and Frances, Ltd., pp. 380-391, 1987.
42. Mann, D.L., Gartner, S., LeSane, F., Blattner, W.A., & Popovic, M. Cell surface major histocompatibility complex class II antigen expression is altered by HIV binding and infection. In: Bolognesi, D. (Ed.), *Human Retroviruses, Cancer and AIDS Approaches to Prevention and Therapy*. New York, Alan R. Liss, Inc., pp. 123-132, 1988.
43. Mark, G.E., Pfeifer, A., Mann, D.L., Harris, C.C., Berman, R., & Pert, C.B. *raf* protooncogene expression in neural and immune tissue. In: Bridge, T. P., Mirsky, A. F., and Goodwin, S. K. (Eds.), *Psychological, Neuropsychiatric, and Substance Abuse Aspects of AIDS*. New York, Raven Press, pp. 45-55, 1988.
44. Weston, A., Willey, J.C., Manchester, D.K., Wilson, V.L., Brooks, B.R., Choi, J.-S., Poirer, M.C., Trivers, G., Newman, M.J., Mann, D.L., & Harris, C.C. Dosimeters of human exposure to carcinogens: polycyclic aromatic hydrocarbon-macromolecular adducts. In: Bartsch, H., Hemminki, K., and O'Neill, I. K. (Eds.), *Methods for Detecting DNA Damaging Agents in Humans: Applications in Cancer Epidemiology and Prevention*. Lyon, International Agency for Research on Cancer, pp. 181-189, 1988.
45. Mann, D.L., HLA and HIV-1 infection. In: Dalglish, A. and Weiss, R. (Eds.), *HIV and the New Viruses*, 2nd Ed. New York: Academic Press, pp. 155-171, 1999.



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Methods

Antigen Stimulation of Immunized Macaque PBL

Cryopreserved PBMC from immunized macaques were washed in RPMI-1640 containing 20% bovine AB serum (bAB), and resuspended in cRPMI[RPMI-1640 supplemented with 10% bAB, 2mM L-glutamine, 1% Penicillin-Streptomycin Solution, and 20mM Hepes Buffer (Invitrogen)]. 10^5 cells/well were cultured with 10 and 20 μ g/ml Hepatitis A Vaccine (SmithKline Beecham Pharmaceuticals, Philadelphia, PA), Rabies Vaccine, Tetanus and Diphtheria Toxoids (Aventis Pasteur Inc, Swiftwater, PA) and PSA highly pure antigen (Fitzgerald Industries International Inc, Concord, MA) in coated Elispot plates. As a negative control, cells were cultured in cRPMI alone. Cells were stimulated with 10 μ g/ml Con A (Sigma) as a positive control. All conditions were plated in triplicate in a volume of 100 μ l/well and incubated for 72 hours at 37°C in 5% CO₂. Elispot plates were prepared by standard method as follows.

ELISPOT Assay

96-well nitrocellulose-bottom plates (Multiscreen-HA, Millipore, Molsheim, France) were coated with 100 μ l/well of anti-human/monkey IFN γ at a concentration of 15 μ g/ml (GZ-4, Mabtech, Nacka, Sweden) and incubated at 4°C overnight. The following day, the plates were washed six times with 1X PBS (Invitrogen) and blocked with 100 μ l/well of cRPMI. PBMC were plated in triplicate in a volume of 100 μ l/well and incubated for 72 hours at 37°C in 5% CO₂.

ELISPOT plates were washed six times with 1X PBS and incubated for 3 hours at 25°C with 100 μ l/well of biotinylated anti-human/monkey IFN γ (7-B6-1, Mabtech) at a concentration of 1 μ g/ml. Plates were washed six times in 1X PBS and incubated for 1

hour with 100µl/well of Streptavidin-HRP (Mabtech) at 25°C. ELISPOT plates were washed a final time in 1X PBS and developed for 30 minutes with 100µl/well of peroxidase substrate AEC kit (Vector Laboratories, Burlingame, CA), followed by rinsing in tap water. Plates were stored over night in the dark at room temperature, and spots were counted using a VersaScan microplate reader (Velocity 11, Palo Alto, CA). The mean totals of IFN γ spot-forming cells (SFC) in triplicate wells were determined and expressed as numbers of SFC per 1×10^5 PBMC.

Determination of Antibody Titers by ELISA

Sera from immunized macaques were screened for antibodies by ELISA. Antibody titers to hepatitis A were determined by HEPAVASE A-96 (Labexim International, Lengau, Austria). Antibody titers to diphtheria and tetanus toxoids were quantified by Diphtheria IgG ELISA and Tetanus IgG ELISA (IBL, Hamburg, Germany) respectively. Methods followed manufacturer's instruction.

Results

Table 1 shows the concentration of pro-inflammatory cytokines and chemokines in the LCM (activated lymphocyte media) that was co-injected with the vaccines to determine if the LCM enhanced T cell and antibody responses in non-human primates to these antigens. Figure 1 shows the time-lines of administration of the vaccines alone and the vaccine co-injected with LCM. This figure also records the days of procurement of cells for examination of T cell response and serum for antibody titer.

The results of the recall response to the vaccines in peripheral blood mononuclear cells from monkeys infected with the vaccine alone or combined with LCM are shown in Fig.2. Due to a freezer accident the cells and serum obtained from the first 5 blood draws from the control monkeys were lost. Even so comparison of responses in cells obtained at day 35 in both groups demonstrates residual T cell memory only in some of the animals receiving the vaccines combined with LCM. Antibody titers were also greater at this time

point and appeared to be sustained at higher levels in the monkeys receiving the vaccines plus LCM. One of the most convincing pieces of data that LCM acts to enhance immunity to a vaccine is the T cell responses observed to PSA (prostate specific antigen) given that these were male monkeys and that PSA in non-human primates is closely related in sequence to the human counterpart that was used as an immunogen in this study. The results suggests that LCM might be useful as an adjuvant in Cancer vaccines where the immune response desired is directed at self antigens.

	Injection										
HepA	+	+	+								
TDT	+	+	+								
Rabies	+	+	+								
PSA	+	+	+								
	0	7	14	21	28	35	42	49	56	Day	
Cells	+					+	+	+	+		
Serum	+					+	+	+	+		
Samples Collected											

		Injection									
HepA	+	+	+								
TDT	+	+	+								
Rabies	+	+	+								
PSA	+		+								
	0	7	14	21	28	35	42	49	56	Day	
Cells	+	+	+	+	+	+	+	+	+		
Serum	+	+	+	+	+	+	+	+	+		
Samples Collected											

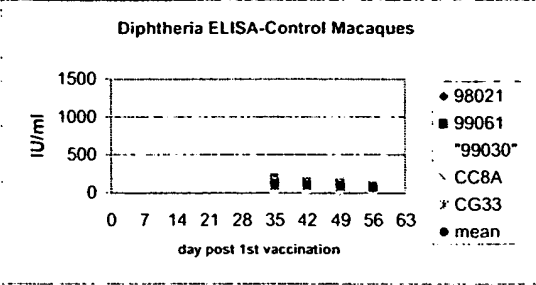
Table 1: Concentration of LCM used in Macaque study = 325ng/ml

Cytokine/Chemokine Concentrations of Pooled LCM Injected into Macaques			
	<i>ng/ml</i>	<i>ng/injection site</i>	<i>total ng/injection</i>
GM-CSF	310	93	372
IL-4	2.5	0.75	3
IL-5	1.5	0.45	1.8
IL-8	4.3	1.29	5.2
IL-10	3.2	0.96	3.8
MCP-1	3.7	1.11	4.4
IL-1a	0.228	0.07	0.274
IL-1b	0.364	0.11	0.437
IL-12p40	0.313	0.09	0.376

0.3ml LCM (97.5ng) was mixed with individual vaccines prior to injection. The vaccine/LCM mixture was then injected IM at four separate sites (right and left arm and thigh).

Figure 3: Antibody Response

Control



LCM

